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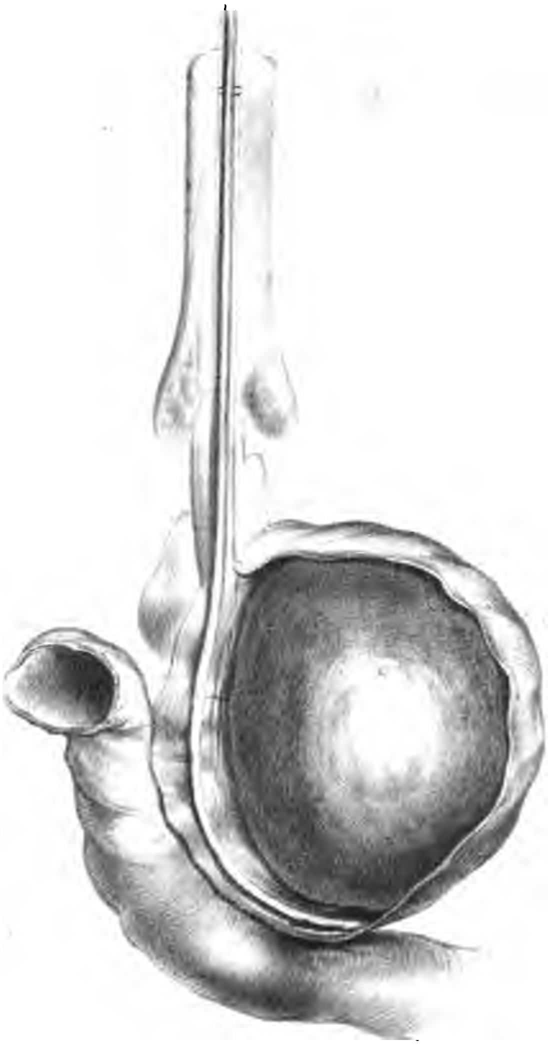

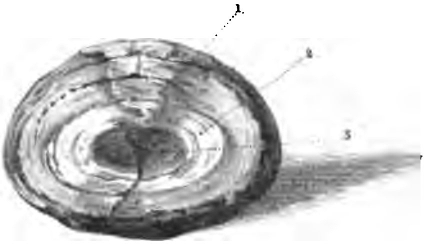

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THE NEW YORK

JOURNAL OF MEDICINE

FOR JANUARY, 1858.

PART FIRST.

ORIGINAL COMMUNICATIONS.

ART. I.—*On Epicystotomy, with the Report of a Case in which this Operation was successfully performed, under the most unfavorable circumstances.* [With Lithographs.] By E. NOEGGERATH, M. D., of N. Y.

THE value of the high operation for removing stone from the bladder is underrated by many of the best authors both in this country and in Europe. Therefore, it must be of importance to bring before the profession as many cases as possible, in order to establish the true position of this operation. But aside from this consideration, the following case contains in itself facts of general interest sufficient to justify its publication.

Case.—Stephen B——, of New York city, was a healthy child when born, and continued to enjoy good health until the age of three years (in the spring of 1852), when his parents noticed a change in his generally lively disposition. He seemed to give up his play, complained of fatigue in the limbs, and became careless, as his parents supposed, in regard to his urine, wetting his bed at night, and even his clothes during the day. The family physician was called in, who ascribed these symptoms to the rapid growth of the boy, and quieted the parents with the assertion that he would out-grow the habit. But, during the winter of 1852, and in the spring of 1853, he got much worse, and a mucous sediment was remarked in his urine, to the amount of one-eighth of the whole quantity. The doctor, consequently, pronounced the disease catarrh in the bladder, and several remedies were administered with varied success. The sediment in the urine decreased considerably during the spring of 1854, and great hopes of perfect recovery were entertained. But in the fall, the boy relapsed, and the mucous sediment not only increased, but was joined by a purulent discharge, and severe paroxysms of pain in the region of the bladder and penis.

In the *spring of* 1855, two physicians of the very first reputation examined the bladder with instruments, and pronounced the case to be chronic inflammation of the mucous membrane of the bladder. The little patient was blistered the whole length of the spine, and a seton was inserted above the symphysis pubis. This was done during the winter of 1856, but without the least benefit. He had now ceased to attend school, and was dragging out a miserable existence. It was very singular that the boy could not sit on any flat surface, such as a chair, but always sat on something sharp, so as to support the perineum; and in walking, he supported the same parts with his hand. During the summer of 1856, the spasms of pain were growing more severe and more frequent; in the fall, the suffering was most excruciating, and his case was considered past all human remedy by his parents and medical attendants. The poor fellow was, therefore, left to the tender mercies of this distressing disease, without any hopes of relief other than in death—which event seemed to draw nearer and nearer during the summer of 1857.

On the 10th of September, I was called to give my opinion in the case. The poor child's appearance, who is now eight years old, was pitiful to behold; his body reduced to skin and bone, with an expression in his face of long continued and intense suffering. He was constantly wetting his clothes with urine, and supporting his perineum and scrotum with his right hand. When I remarked this last phenomenon, I determined to make an instrumental examination of the bladder, although the skillful physicians who had, in their examination, found no stone in the bladder, almost satisfied me that there was really no calculus present. After the boy was entirely chloroformed, I introduced an ordinary steel sound into the bladder, and my index finger of the left hand into the rectum. By moving the point of the sound from the right to the left side, I passed over the fundus of the bladder in its whole extent, without being enabled to get the desired feeling of metal scratching over a hard body. In searching at the same time with the finger in the rectum, nothing but the natural tissues could be felt between the index and the sound. For the moment, therefore, I was satisfied that no stone was present. I proceeded in this way for some time, moving the point of the instrument sidewise as far as I was able; I then tried to push the finger upwards as high as I could beneath the sound, and in doing so had the sensation as if I touched an unnaturally hard body lying between the pubes and my finger. Therefore, I continued searching with the catheter in another direction, moving its point forwards and backwards. This I did without any better result, till, at length, while I pressed the instrument as firmly as I could against the arcus pubis, and moved it at once in that way, I felt at times as if it struck against a hard body with a very small point of its circumference. But this sensation was so indistinctly and so rarely perceived, that I was obliged to ask for a second examination before giving a decided opinion. This was performed a few days later, together with Doctor Krakowizer, of New York. In examining, we followed the same method as before, with a more favorable result; for, in moving the instrument, as stated above, we had the sensation of the *end of the sound*, introduced into the bladder as far as possible, touching a stony substance, but only to such a limited extent that we both declared there was *a small stone to be felt near the posterior wall of the bladder.*

On September 19th, I performed the high operation upon this boy, assisted by Drs. Krakowizer and Voss, of New York, and Dr. Simrock of Ward's Island. The patient being chloroformed,* I divided the skin to the extent of about one inch and a half—the lower edge of the wound touching the symphysis pubis. After cutting through the muscular wall, as near as possible in the direction of the linea alba, I touched a layer of fat, about half an inch thick, which was the more unexpected as the boy was remarkably lean all over his body. This was separated by the handle of the scalpel, and moved upwards as high as possible. We now tried to elevate a portion of the fundus vesicæ, by the catheter, which, to our great astonishment and annoyance, could not be accomplished for a considerable time; till, at length, after repeated and persevering efforts, the end of the instrument passed forward with a sudden movement, as if it had freed an obstacle, and appeared in the wound, thus bringing in sight the anterior wall of the bladder. This was retained in its elevated position by a hook, and laid open to the extent of about one inch—the cut ending below, as near the symphysis pubis as possible. On doing this a small artery was opened, and a trifling hemorrhage ensued, which was promptly stopped by the application of ice. Into the cavity of the bladder I now introduced my finger, and found it filled out entirely by one enormous stone—enormous at least compared to what we expected to find after our two examinations. The walls of the bladder were so closely applied to the surface of the stone that there was left no room for anything else, and consequently not one drop of urine was to be found in this organ. When I had introduced a pair of forceps and had grasped the stone, the hook holding the bladder gave way, and the latter sank down towards the os sacrum. The extraction of the stone was surrounded with more difficulties than we expected. Though the forceps held the stone fast in its gripe, so much so that a considerable portion of the external layers broke loose and fell away, I tried in vain for some time to bring it into view. This difficulty was partly owing to the diameter of the stone being larger than the opening in the bladder, and partly to the fact that the bladder opposed its removal by being spasmodically contracted around it. I therefore tried another forceps, which was easily introduced notwithstanding the unfavorable situation of the bladder in the depth of the wound. At length, when I had turned the stone upon its axis, I was able to extract it, but not without applying the whole strength of my right arm. The extraction of this stone resembled, in many respects, a difficult obstetrical forceps operation. After this, we had to remove a good number of stony particles which remained from the surface of the stone; and even after forcing a stream of water through the opening in the abdomen, by means of a catheter introduced into the bladder, there was still remaining a considerable quantity of sand both in the bladder and in the tissues surrounding the external wound. But in addition to this, there was a large round opening existing in the bladder, besides the one made by the operation, distinctly felt by the physicians present and myself. We were satisfied that it was a round opening with smooth edges, of the size of a Spanish quarter, and situated near the apex of the bladder. But while Dr. Krakowizer thought that the opening communicated directly with the abdominal cavity, because he had the impression that his index finger, passing through the hole, touched the small intestines, I felt distinctly that my finger went up from the opening directly into a fleshy tube, running upwards towards the umbilicus, thus leaving it for the present undecided whether there was a communication between the bladder and one of the intestines, or if the lower end of the *urachus* remained unclosed or in its fœtal condition. The favorable course that the operation took excluded as well Dr. K.'s as my first opinion, thus leaving only one explanation of the fact, viz.: that the urachus was either not obliterated after the child was born, or reopened and enlarged again in the first years of life, thus serving as an accessory bladder for reception of urine while the cavity of the bladder itself was filled by the stone. All the circumstances considered, the prognosis was more than doubtful, nay gloomy.

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* I injected the bladder with warm water, which was expelled immediately beneath the catheter, so that I had to operate upon an empty bladder.

When the boy recovered from his narcosis, the pain felt in the wound was very intense, for which he was ordered to take ten drops of laudanum liquid. Sydenh. every half hour, until he began to feel easier. The only bandage I applied was a small piece of sponge, to be changed as often as it was drenched with urine. The reaction, after the operation, upon the patient's system was so trifling that his pulse never exceeded the number of 80 in a minute. Soon the water began to be discharged freely through the wound, carrying along daily a great quantity of sand and small pieces of stone. In a very short time, there appeared in the external opening that portion of fatty and cellular tissue, mentioned above, which I had to remove in the depth of the wound before reaching the bladder. It soon became of a lifeless, whitish color, and was separated by a gangrenous process from its neighborhood, so that I could remove it by and by with the scissors. Meanwhile, the boy grew stronger and more fleshy, and passed a portion of his urine through the penis, on the 12th day after the operation. By far the greatest section of the wound was now filled up with healthy granulations. Small particles of stone passed continually through the wound and the urethra. At about the 14th of October the external wound was almost entirely healed up, with the exception of a scarcely perceptible fistular opening, through which the water passed only when the boy tried to expel it forcibly. From time to time the water was prevented from running freely through the penis, in consequence of small fragments obstructing the passage on their way through the urethra. But when, towards the end of October, the passage of urine through the penis was continually attended with difficulties, though no more sand was found coming away with the water, I thought it proper to introduce an elastic catheter into the bladder, and let it remain there continually, in order to have a constant free flow of urine, thus giving a better chance for the closing up of the fistular opening above the pubis. The introduction and retaining of the instrument in its place was surrounded with many difficulties. Every time I changed them, the boy had to be chloroformed; the bladder would constantly expel them, and it was almost impossible to keep them in the right position for any considerable length of time. The surface of the instrument soon became roughened by the depositions from the urine, which was always impregnated with alkaline salts. In consequence of this, the urethra became so irritable that I had to remove them after a few days' trial, to avoid the dangers of urethritis and cystitis.

But while introducing these instruments, I had the sensation as if they were scratching over stony matter, just before entering the bladder. This, in connection with the fact that the obstacle which prevented the urine from running easily was only felt at the time when the patient made the first effort to discharge his water, while it flowed quite freely when once begun, led me to believe that the prostate was the seat of the difficulty. I therefore chloroformed the boy again, introduced a steel sound, and was now enabled to feel stony particles in the prostatic portion of the urethra. I passed the instrument several times over them in every direction, trying to loosen them from the surrounding tissue; and after withdrawing the instrument, the next urine that was passed contained several small stony particles, but of a very different shape from any that were discharged before. They were perfectly round, and not thicker than the head of a pin, thus exhibiting unmistakable specimens of prostatic calculi. What was to be done now? I was sure I could not have removed them all in this way, especially when I remarked that the difficulty in the passage of the urine was very little lessened after this operation. I therefore resorted to a chemical agent for dissolving the remaining portions. The solution, which will be fully described in the course of this article, was quite clear, and injected twice a day into the urethra by a small india-rubber syringe. The patient was ordered to evacuate his bladder a few minutes after the injection was made. The solution came out quite thick, for the first four or five days; but this soon changed, and when they had been used ten or twelve days, the fluid returned almost as clear as it was injected. At the same time, the boy began to pass his water more freely; and during another examination of the diseased parts, I was unable to feel the least stony matter with the instrument. Still the urine continued to show evident traces of continued catarrh of the bladder; and though the passage of the water became daily less difficult, it was not yet what it ought to be. I therefore ordered the following to be taken:

℞. Balsam. Copaiv. ʒj.
S. in mucilag. gum. arabic. ℥v.
Adde natri bicarbon. ʒiss.
Syrup. cortic. aurant. ℥j.
M.D.S., 4 times a day, one tablespoonful to be taken.

At the same time, the balsam was injected once every day, with linseed tea, beginning with a few drops, and increasing the dose as it could be better borne.

Under this treatment, the urine became clearer; its passage almost entirely free; the capacity of the bladder entirely restored; the wound apparently closed up entirely, still giving exit to a drop of urine occasionally. The boy was now able to keep his clothes dry even at night. He has grown fat and stout, and has but one complaint to make, and that is an unsatisfied appetite.

Description and Chemical Analysis of the Stone. (*See the lower fig. in adjoining plate.*)

The calculus, which was removed, measured two and a half inches in length, and four inches in circumference, and weighed a little less than two ounces. It was of an ovoid shape, and its rough surface of a dirty greyish brown color. When sawn asunder, it exhibited a lamellated appearance, consisting at once of three distinctly different concentric sections:

1. The outer layer, which was the thickest one, appeared to be of a pale yellowish color, was very friable, and exhibited in some places an aggregated mass of small, shining crystals. A particle of it heated before the blowpipe immediately turned black, emitting, at the same time, a disagreeable smell of ammonia; heat being applied more intensely, it began to fuse and diminish to about one-third of its original size, leaving a white, sparkling bead. Another portion of it was treated with dilute hydrochloric acid, in which it dissolved, almost entirely, with effervescence. The acid solution was almost neutralized with ammonia and treated with oxalate of ammonia, which threw down a white precipitate of oxalate of lime; when the ammonia was added to the acid solution of the calculus in excess, it caused a crystalline precipitate of the mixed phosphates of lime, and of ammonia and magnesia, as proved by the microscopical examination. These experiments show sufficiently that the outer crust consisted of the so called *fusible calculus* (which is a mixture of phosphate of lime and the double phosphate of ammonia and magnesia), together with some *animal matter* and *carbonate of lime.*

2. The second section of the stone forms the least considerable portion of it—is almost white in color, and its texture harder than that of the outer layer. Before the blowpipe, it charred very little, gradually became white, and could not be fused at all, leaving a residue the bulk and shape of which differed scarcely any from the portion originally taken for examination. Another particle, treated with dilute nitric acid, dissolved readily, with strong effervescence. One portion of the acid solution was neutralized with ammonia, when a gelatinous, amorphous precipitate was thrown down (phosphate of lime). To a second portion of the acid solution, a few drops of nitrate of silver were added, and the mixture cautiously

neutralized with dilute ammonia: a pale yellow precipitate was thrown down. These experiments proved that it consisted of a *mixture of carbonate* and *phosphate of lime.*

3. The inner segment or nucleus, of the size of a large almond, is of a clay color, inclining to brown, and arranged in thin, very distinctly marked, concentric layers. Before the blowpipe, it decrepitated and parted in all directions, so that it was very difficult to retain a piece on the platina for further examination. When heated even to a slight degree, it blackened and exhibited a strong smell of burnt feathers, and disappeared gradually, leaving only insignificant traces of a whitish ash. Another portion of it placed in a warm solution of potash dissolved entirely, giving off at the same time ammoniacal fumes. When dilute hydrochloric acid was added to the hot solution, a precipitate was formed, which showed, under the microscope, small crystals of uric acid. Treated with nitric acid and afterwards with ammonia, it turned exquisitely purple, owing to the formation of murexide. Thus there was left no doubt that the nucleus consisted of *urate of ammonia.*

A very interesting feature in our case was the difficulty in finding this stone, notwithstanding its being uncommonly large and filling up the entire cavity of the bladder. The physicians who attended the patient previously, examined the bladder, and failed to detect the stone. This was done about two years ago. If we consider the enormous size, the weight, and the different layers of which the stone is formed—if we take into consideration the fact that, for about three or four years, the symptoms referable to the urinary system underwent no change in quality—we come to the conclusion that a stone, and one of considerable size, was present at the time when the first instrumental examinations of the bladder were made. Moreover, if a stone of this enormous size had really been formed in so short a time, no doubt the attending physician would have remarked a change in the local symptoms, and attempted another examination. The surgeons, I must repeat, were of the first reputation—still they failed in detecting the stone. This is not surprising. The same thing has happened to the greatest men in the profession, on this and on the European continent. Lapeyronie, Portal, Distel, stars of the first magnitude, died of stone in the bladder, and in none of them could the stone be detected with the sound during life. If we run over the history of cases where calculi in the bladder could not be found, we are always informed that they were exceedingly large ones, weighing from three to ten ounces, which escaped observation, even after the most scrutinizing search. Such was the case in this instance. The stone, two inches and a half in diameter, filled up the bladder entirely—a condition which I could easily ascertain during the operation, confirmed by the fact that every drop of urine passed away through the urethra as soon as it had reached the bladder.

There must be a reason why a large stone is more difficult to discover than a small one. Before giving an explanation of this phenomenon, let us state a few facts in connection with the physiology of this organ. The outside pressure of the atmosphere, as well as the contractibility of the bladder, prevents the presence of air in its cavity. This I have ascertained in one or two cases by forcing a stream of air through a catheter, after injecting the bladder first with water; then I let the latter flow off, and when all of it was discharged, a sound was heard as if one was blowing into a narrow metallic trumpet. This being the case, the walls of the bladder must inevitably touch each other when it is empty, while there is vertical axis in the bladder when it is filled with one homogeneous substance, the laws of gravity only being represented if the bladder contains two substances of a different specific weight. These principles, applied to stone in the bladder, it is evident that if a good deal of water and a small stone are contained in this viscus, the latter must sink to the bottom. A very large stone is generally connected with more or less complete incontinence of urine, so much so, that even the water injected is driven off through or beneath the catheter. Therefore, large stones are generally the sole occupants of the reservoir.

From the above explanation of principles, applied to calculus in the bladder, it would appear that a large stone in the bladder presses no more upon the base of that organ than upon its fundus. Therefore, if we introduce a sound, and searching, as every one does, the base of the bladder, we touch nothing but the soft mucous membrane, the instrument, while moving to and fro, constantly removing from the stone a portion of the sac, wherever it happens to be placed, while the stone is kept unchanged in its position by those sections which are unattained by the sound. If the latter is driven in as far as possible, it removes the posterior walls of the bladder from the stone, which in this instance is kept in its position by the superior anterior and lateral walls. This state of things is represented in the accompanying plate, which has been prepared according to my suggestions, and added to this article in order to make my views more readily comprehended. It is intended to show the way in which a sound may be situated inside the bladder without touching a stone of the greatest circumference.

The catheter does not simply remove the bladder from the stone, but in doing so it must become closely surrounded by a portion of the bladder, so as to lay between two membraneous folds, which by touching each other at their uppermost edges, form a perfect and soft channel in which the instrument moves up and down. This must be true, as the bladder is void of air, and the vacuum between the instrument and the stone has to be filled up with something.

In looking at the figure, it will be readily understood that there are only two portions which may possibly be brought in contact with the stone, viz.: the point of the instrument, and that portion of the catheter which lies nearest the orifice of the bladder. Whether the latter portion can be directed so as to touch the stone, depends entirely upon the inclination of the pelvis. In case of its being very much inclined, it is the lower edge of the arcus ossium pubis which prevents their contact entirely. The point of the instrument offers better chances of touching the stone. By elevating the entire instrument on a horizontal line, and moving it at the same time alternately forward and backward, it may be brought in connection with the stone. So it was in our case; we had the sensation as if a small stone was present, and encysted in some portion of the posterior wall of the bladder. But it often happens that the point of the sound, having entered the bladder, pushes forward a portion of the bag, which, readily contracting around it, thus creates a moving diverticle, in which the searching point is encysted. Even if it touches the stone, it is done through a coat of soft organic tissue, thus hiding from our judgment the real state of things. This simple explanation will be, no doubt, generally admitted as the true one, because it is based upon clear principles of physics applied to physiology, and strengthened by observation.

The high operation for stone was falling into disuse on this continent, when Professor W. Parker, of this city, revived it by three bold operations. For this act the profession owes him a debt of gratitude. The same service was rendered to France by Souberbielle, who published an article on "*Lithotomie sus-pubienne*," in the *Journal des Conn. Médic.*, December, 1842, which showed a great success, even in the worst description of cases. In Germany, it was Dr. Günther, of Leipsic, who directed the attention of practitioners to this almost abandoned operation, in a thesis on high operation, written in 1851.* In this effort he succeeded so well, that some of the greatest surgeons of Germany operated much and successfully after this method. I often had occasion to hear Professor B. Langenbeck, of Berlin, pronounce a very favorable opinion in regard to this operation. He prefers it to all other methods of lithotomy in operating upon women and children. Professor Pitha, of Prague, in his article, "*Diseases of the Genital Organs*," in Professor Virchow's *Handbuch d. Spez. Pathologie*, Erlangen, 1855, gives his decided opinion as to the superiority of this method for operating in women and children. If surgeons like those above mentioned begin to prefer the high operation for stone, to the lateral section, there is no doubt that the profession in general will follow their example. This has been done already to a great extent.

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* G. B. GUNTHER, M.D.: *Hohe Steinschnitt seit s. Ursprunge bis zu s. jetzigen Ausbildung.* Leipzig, 1851.

We receive daily accounts, by the medical journals, of the increasing popularity of this operation, and I am quite sure that in the next edition of Coulson's splendid work on Diseases of the Bladder, the following words (p. 491, 5th ed., 1857), "This method of operating is now nearly abandoned in this country (England), though it is still practised occasionally in France," will be changed into a different reading. The same author gives his opinion in plain words, that the high operation should be reserved for those cases in which the pelvis is so deformed that the proper incisions cannot well be made in the perineal state. If we were inclined to adopt this rule as a guide, the performance of the high operation would be necessary perhaps three or four times in a century. In this case it had better be given up altogether. With Coulson, most of the modern English and American authors consider lateral operation as *per se* superior, and after enumerating its advantages, pass over to the description of the exceptional cases where the high operation is justified. Thus, Professor Gross, in his work on Diseases of the Urinary Bladder, etc., opens the discussion on suprapubic operations in this way: "The proceeding, *although objectionable as a general rule*, may occasionally be resorted to," etc.

If we consider this operation from another point of view, we must come to very different results. By far the most direct, shortest and least dangerous way to reach a stone in the bladder, is doubtless that through the anterior wall of the bladder above the symphysis ossium pubis. The cutting into the bladder in the median line of the hypogastrium, through the linea alba, is connected with neither technical nor anatomical difficulties, and we run no risk of injuring important anatomical structures, except the peritoneum, which may be easily avoided if we operate carefully. This method enables the surgeon to make a sufficiently large opening into the bladder, suitable to any size of the stone, thus facilitating the searching for stone and its extraction more than in any other method. The idea of urinary infiltration following this operation has haunted the surgeon like a nightmare. And really this danger is but imaginary if the subject is rightly considered. If in any case urinary infiltration was to be dreaded, it was in our own. There the bladder lay very deeply in the wound; above it was an enormous pouch, surrounded laterally by a great many layers of cellular tissue, so that we could but expect that the urine stagnating in this spacious cavity, would spread and give rise to urinary infiltration. But nothing of the kind happened, I believe, therefore, with most of the recent authors on high operations, Dr. Günther especially, that the danger of urinary infiltration has been overrated.

The danger of injuring the peritoneum ceases with a sufficient knowledge of the anatomy of the parts, and if also we exclude those exceptional cases from this method of operation, where the bladder is displaced so as to lay in the depth of the pelvis, near the excavation of the os sacrum. In these instances the bladder is situated behind the symphysis ossium pubis, and of course the peritoneum is dragged down to the symphysis. Such a state of things is met with in very old and lean people, and this is really the only contra-indication of the suprapubic operation. Most authors reject the high operation if the bladder cannot be filled and distended with water. In our case, not a drop of water was retained in the organ, still we had not the least difficulty in finding or opening it after it was elevated by the catheter. Finally, we encountered another obstacle to the successful performance of the operation, often noted by lithotomists, viz. a great accumulation of fat in the suprapubic region. This was also overcome without difficulty.

We conclude, therefore, that the high operation for stone, in a general point of view, may be executed just as easily and safely as the lateral or perineal section, while it presents some striking advantages over these methods in performing it upon children and women. The fundus of the bladder when filled with water is situated high above the symphysis pubis in women and young persons, and that portion of it which is uncovered by the peritoneum, presents itself easily to the operating instrument. In children especially, under eight years of age, the peritoneum, where it begins to cover the bladder, does not descend deeper than 1½″ or 2″ below the umbilicus, so that we may cut down safely through the abdominal wall under this space, without any risk of injuring the peritoneum or any important bloodvessel. But in executing the lateral section in children, great arteries, as well as the seminal ducts, seldom escape the touch of the scalpel, thus giving rise to dangerous hemorrhage and consequent impotency. This is owing to the fact that the space between the arcus pubis, orificium ani and tuber ischii, is not only absolutely but also relatively smaller in children than in grown people. The same state of things prevents our removing a stone of any considerable circumference through a cut in those regions, and even the extraction of a small stone is generally accompanied by dilaceration of the tissues next to the wound in the lateral region.

The high operation for removing stone from the bladder of females, is of all methods the easiest to be exercised, and the safest, because the disastrous consequences connected with the other methods, such as incontentia urinæ, fistula vesico-vaginalis, etc., are avoided. And although the operation for the cure of fistula vesico-vaginalis has almost attained a state of perfection by the assiduous operations of our great surgeons here and abroad, this fact does not diminish the advantages of the high operation, when compared with the other methods, for it is better to relieve a patient by one than by two or three operations.*

One cause of death after the high operation which has been lately observed in a few instances by Dr. Günther and Prof. Pitha, viz. a complete and sudden suppression of the urinary secretion (anuria) cannot be imputed to the method, because it is an incident which occasionally follows the different operations which apply to the bladder, such as lateral operation, lithotrity, and even simple catheterism.

In regard to treatment after the operation of epicystotomy, I would recommend that no catheter or bandage be employed, but that the wound be covered with a clean sponge or pledget of lint to receive the urine, thus keeping the bed linen dry, and the patient comfortable. Other dressings than these are more apt to promote than to prevent urinary infiltration and irritation of the bladder.

In expressing these views of the high operation, I am sustained by nearly all of the great German surgeons, by some French surgeons of *premier qualité*, very few English, and one or two American surgeons of the first standing. I was encouraged by this support in the preparation of this article; for, though satisfied of the correctness of the views presented, my own experience is too limited to have the weight of authority.

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* The method which Prof. G. C. E. Weber calls his own, and a new one (in an article on lithotomy in this Journal), is not excluded from this consideration, as it is only admissible with middle-sized and brittle stones. If the woman upon whom he operated had possessed a stone like the one that we extracted from this child's bladder, he would have been obliged to give up operating in his way, and choose another way for opening the bladder. But until the surgeon actually sees the stone, he is seldom enabled to judge of its size, and never of its density.

I hope that surgeons of large experience will improve their opportunities for testing the merits of the high operation, convinced that it will yet supplant all others.

Every surgeon who is called upon to treat a patient for stone in the bladder, will prefer the operation with the knife or the lithotrite to the tedious application of internal remedies for dissolving the stone. This will be generally admitted. On the other hand, every physician who has treated cases of concretions in the bladder, must have felt a desire of having a preparation, which might enable him to dissolve stone. There are patients who will rather bear their sufferings than be approached with an instrument, or if once operated upon, decline any further surgical interference. Again, we often meet with such a high state of irritability of the bladder, that it would be unsafe to increase it by a protracted employment of steel instruments. In other cases the calculus is small, so that we do not feel justfied to subject the patient to all the hazards of a regular lithotomy for relieving him from the trifling uneasiness connected with his disease, especially if the condition of the urethra or the location of the stone is such that we must abstain from lithotrity. This is not all. We meet with hundreds of unforeseen circumstances, which make it desirable to have a solvent for stone.

Various attempts have been made to dissolve stone in the bladder, sometimes by introducing remedies into the system by the digestive organs, sometimes by direct application to the calculus. It is the latter ones that we intend to subject to a short analysis, to see if any one of them is worthy of attention. Until within the last few years, the therapeutical treatment of stone has been the almost exclusive privilege of irregular practitioners. This is one reason that it is but recently that some really scientific men have taken the matter in their own hands. The remedies used by the latter may be divided into two classes, viz. 1, simple solvents; 2, chemical agents, working on the principle of double decomposition. Among the former are to be counted, (*a*) acids (for phosphatic stones), such as muriatic acid, nitric acid (Brodie), gastric juice (Dorsey, Millot); (*b*) alkalies (for lithic calculi), lime water (Berzelius, Amussat, Leroy), borax (Ure, Gay Lussac), Vichy water (Petit, Chevallier), Baréges water (Desault). It would surpass the limits proposed for this article, if we were to discuss the value of these remedies. I shall, therefore, confine my remarks to those of the second class, viz. agents acting upon the stone by double decomposition.

The chemicals proposed for this purpose are preparations of lead, and among these the nitro-saccharate of lead has been applied in practice. Some of our greatest surgeons, and among them Prof. Gross of Philadelphia, when speaking of lead preparations as solvents for stone, show clearly that they have not the least confidence in their application. But the observations of Dr. Hoskins of Guernsey, England, made such a favorable impression upon my mind that I was induced to make some further inquiries regarding the solubility of stone by the method of double decomposition.

Instead of nitrate of lead I employed the acetate (plumbum aceticum) thinking that the presence of an organic acid would have a greater affinity for a chemical compound formed in a living organism. Before using it as an injection, I instituted the following experiments. In one ounce of water I dissolved 10 grains of acetate of lead, and superacidulated it with 10 drops of strong acetic acid. This clear solution I poured over ten grains of stony particles taken from the outer layer of the calculus. As soon as they came in contact with the water thus saturated, it seemed as if whitish vapors began to settle around each of them, emitting at once, small air-bubbles. These clouds grew thicker and thicker until at last the particles were entirely enveloped. I now began to agitate the fluid by moving the bottle slowly up and down for about half an hour, the consequence of which was, that the formerly clear solution turned quite thick, thus proving that a chemical process was going on. The mixture, when examined the next day, presented the following appearance. The fluid portion was almost clear, while the bottom of the vial was covered with a thick, coherent precipitate, which consisted of three portions; (*a*) some few of the stony particles left coherent, but all greatly diminished in size; (*b*) a greyish, powdery concretion, being seemingly, a mixture of disintegrated particles of the stone, and precipitated portions of the lead; (*c*) a layer of a perfectly white substance shaped in a coherent thin foil. After filtering the liquid from the solid portion, I separated the three different specimens of residue as much as possible. I was able to collect six of the fifteen small pieces of stone which I had subjected to the test. While in bulk, they formed about the third part of the original stock, they had lost so much of their weight, that they weighed not more than *one grain*, and were so much changed in their constitution that the slightest touch with the finger was sufficient to crush them into powder. Another portion of the calculus was reduced to a very thin dust.

The white layer (*c*) I collected on charcoal, and exposed it to the blowpipe, when to my great surprise, it melted away to a greenish white bead, which after cooling, crystallized so evidently that not a shade of doubt could be left about its nature—it was *phosphate of lead.*

The liquid portion filtered from the solid mass exhibited a strong acid reaction to test paper. A stream of hydrosulphuric acid, being transmitted through the fluid effected not the least change in it; thus proving that the 10 grains of acetate of lead taken for the experiment, had been entirely reduced. A further chemical examination showed that the liquid contained a great quantity of lime, and some ammonia, in solution, the acids combined with them, being phosphoric and acetic acid, the latter in excess.

The conclusions drawn from this experiment may be expressed as follows: A superacidulated solution of acetate of lead acts upon phosphatic stones as a decomposing, desintegrating, and solvent agent; the phosphoric acid previously combined with lime or ammonia, uniting with the lead, the acetic acid of which goes over to a portion of the lime or ammonia, in exchange for phosphoric or carbonic acid, while the free acetic acid in the water renders a portion of the undecomposed phosphate of lime soluble.

Further, it became evident that 10 grains of the lead are not sufficient to decompose 10 grains of a phosphatic stone. But this has no value in practice. The particles of stone which were left unchanged in size and shape had undergone such changes that agitation in water sufficed to turn them into powder.

This one experiment speaks clearly enough, and not the least shade of doubt can be left that acetate of lead is a remedy by which we are enabled to destroy and dissolve phosphatic stones. I therefore resorted to it with confidence in its efficacy, and I was not deceived. The remaining particles of stone in the bladder and prostate were dissolved. In short it acted admirably in the manner stated above. Its employment was attended with no difficulty at all; it produced neither pain nor irritation in the urethra or bladder, and the happy result of our operation is due, to a certain extent, to these lead injections.

The formula I used was as follows:

℞ Plumbi acetic. grs. vi.
S. in aqua. fontan. ℥vi.
Adde acidi acetic. fort. q. s.
ad solution. perfect.
D. S. One small syringeful to be injected twice a day.

101 West 26th street.

ART. II.—*Cases of Paracentesis Thoracis.* By JOHN T. METCALFE, M. D., Professor of Practice of Medicine, University Medical College, and Physician to Bellevue Hospital, New York.

Case 1.*—William Kirch, aged 24, German, by occupation a currier, entered the New York Hospital, February 15th, 1855. Free from any hereditary tendency to disease.

Three weeks before admission, had been taken with pain in the left side, and cough, followed by febrile symptoms and dyspnœa. The pain was of a sharp, lancinating character, increased by a full inspiration. The cough, dry at first, was accompanied, shortly after, by an abundant expectoration of viscid aerated mucus. There had never been hæmoptysis, nor previous chest trouble.

On being visited after entering the service, he was found to be considerably emaciated; his cheeks were sunken, skin pale, warm and perspiring; countenance anxious. The pulse, small and weak, 116; respiration extremely labored, 36; decubitus, indifferently on the right or left side; tongue moist and covered with dark fur; anorexia.

The left chest, perceptibly larger than the right, presented a smooth surface, with effacement of the intercostal spaces; little or no expansion of this side, on forced inspiration; considerable fullness of the left hypochondrium; heart's apex beating to the right of the sternum, near the nipple. Percussion dull over whole of the left side. No respiratory murmur over affected portion. Posteriorly, distant, harsh, bronchial respiration, with broncophony, was audible at upper part of left interscapular region. The right half of the thorax presented the usual phenomena of supplementary respiration—no evidence of pulmonary disease being present.

Recognizing the existence of effusion into the left pleural sac—the patient was kept upon the usual course of diuretic and counter-irritant remedies, without beneficial results, until the 19th, four days after admission. His condition had only been changed for the worse. The pulse ran up to 133, the dyspnœa had augmented; the cough much more troublesome during the night; expectoration bronchitic, muco-purulent, and more abundant than at last note. Physical examination revealed no material change in the condition of the chest. The respiration was only audible, as bronchial, at the upper part of the lung; the heart sounds were transmitted very clearly over the whole left side.

As it seemed certain that medicinal treatment promised nothing encouraging, I determined to ascertain what benefit might follow removal of the fluid by operation. On introducing the small exploring needle, pus flowed from the groove. The trocar of Wyman's instrument was then passed into the chest, in the eighth intercostal space, under the angle of the scapula, and sixty-four ounces of pus were withdrawn by the exhausting syringe. During the operation, the patient lay on his back, near the edge of the bed, and had a roller bandage, one end of which was held by an assistant, passed around his thorax.

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* Reported by Dr. H. B. Mills.

After the amount of pus mentioned had been removed, there was complaint of cough, and a disagreeable feeling of oppression under the sternum. Nothing like syncope was observed. The patient was comfortably bandaged and resumed his ordinary decubitus. In a few minutes he expressed very great relief from the dyspnœa, and said he felt "almost as well as ever." The pulse fell to 120, and the respiration was diminished in frequency. In this operation, no air entered the chest during or after its performance. The aperture was closed by a piece of adhesive plaster, and an anodyne given.

Examination of the chest showed that there was resonant percussion over more than half of the diseased side, at the summit; that there was loud bronchial respiration, broncophony and coarse sub-crepitant rhoncus over the resonant part, and that the heart had returned two inches nearer to its normal position.

On my visit next day, I learned that Kirch had been very comfortable, during the evening, and had gone to rest at the ordinary hour. Towards one o'clock on the following morning, the nurse went to look at him and found him laboring under great dyspnœa, from which he almost immediately afterwards died.

An examination of the body was made thirty-two hours after death. Weather cool. *Head*, not examined. *Thorax.*—On opening the cavity, no escape of air from pleura. The right lung was free from adhesion to chest wall. It was more intensely œdematous than I had ever before seen pulmonary tissue; non-crepitating on pressure; scattered patches of lobular collapse, especially in lower lobe; healthy in structure, except a small tubercular deposit at posterior summit. The left lung covered by old false membranes, completely carnified, containing a few miliary granulations at its apex, extended from the upper part of the pleural sack to the diaphragm, forming a sort of roll, in close apposition with the vertebral column. For an inch from its free surface, the bronchiæ had become white cords, from the great compression, no trace of a tube being recognizable. Careful search made it certain that no perforation of the pulmonary pleura had occurred. In the left sac, about thirty or forty ounces of pus, in which abundant flakes of false membrane floated. The exudations on the costal pleura, tinged red by hæmorrhagic extravasations—the latter not most marked in the vicinity of the puncture made by the trocar. The bronchial glands large and filled with black pigment matter. Larynx and trachea healthy.

There was nothing abnormal in the state of the heart except a slight degree of thickening of the free edges of the mitral valve.

Abdomen.—Organs healthy, except the liver, which had become somewhat cirrhosed ; weight, five pounds.

From the extremely œdematous state of the lungs, I feared that too much fluid had been removed at once, and that a sort of vacuum had been formed, which allowed pulmonary congestion to such a degree as to bring about the dropsical condition noted. This explanation was with difficulty received, on reflection, as the time that elapsed between the tapping and the evening visit, seven or eight hours, would have almost certainly enabled the house physician to perceive the approach of such serious trouble, had it been coming on. I made strict inquiry to assure myself that no undue amount of anodyne had been administered, and was perfectly certain that only a small dose had been given.

I regretted my inability to examine the brain; but this was not allowed by those to whose permission we were indebted for the autopsy already recorded. The mode of death was new to me, not having met with anything like it, in cases operated on before or since the one of Kirch.

Case 2.*—James Britt, æt. 34, a native of Ireland, by occupation a tailor; admitted to Bellevue Hospital, May 17th, 1855. Several circumstances in the history of the patient's family, and its collateral branches, pointed to the existence of an hereditary predisposition to phthisis. His mother and her brother died of "pleurisy," as the patient says, after protracted illness: he is himself the only surviving member of his family, his two sisters having died under the age of 14, with symptoms strongly indicative of tubercular disease.

The patient had in his youth two severe attacks of fever, and also the intermittent fever; but his general health remained good, until the age of 18, when he became intemperate and irregular. He has had syphilis in its primary form, with buboes, and seems to have suffered from some secondary symptoms and tertiary rheumatism. He has been salivated once. His habits and occupation exposed him to frequent colds: these have never been protracted, and he has never suffered from hæmoptysis.

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* Reported by Dr. Wm. H. Draper, House Physician.

His present illness he dates from the 1st of May, and ascribes to a cold taken during exposure: he was seized with darting pains in the left side, anteriorily, accompanied with difficulty of inspiration and a dry cough. On admission, physical examination detected effusion in the left pleural cavity, rising to the middle of the scapula, and displacing the heart to the right side. The patient's general condition was feeble and anæmic: he was harassed by a dry barking cough, and had no appetite.

The treatment consisted in the use of the Pil. Triplex,* with Tr. Ferri Muriat. and bitter tonics internally, and a succession of blisters over the affected side. This course was pursued for three weeks, without any marked improvement in the patient's general condition, or any perceptible diminution of the effusion. On the contrary, his health seemed to be failing. He suffered considerably from dyspnœa, from irregular shooting pains in the left chest, with anorexia and marked hectic. No physical signs of phthisis could be detected.

Under these circumstances, it was determined to submit him to the operation of paracentesis thoracis. On the 12th of June, the day the operation was performed, his condition was as follows: Pulse, 96; respiration, 32; skin hot and moist. Physical examination revealed the same conditions before noted. On measurement, the dimensions of the two sides of the chest were found to be the following:

Around the nipple, R. S., 18¼ inches.
" " L. S., 18½ inches.
" lower extremity of sternum, R. S., 18 inches.
" " " " L. S., 17¼ inches.

An opening was made into the cavity under the axilla, in the seventh intercostal space, the patient lying on his back. Ninety-six ounces of pale, straw-colored, perfectly limpid, transparent serum, flowed freely through the canula. The patient expressed a sense of immediate relief. He was placed on the use of "Ammon. Sesqui-Carb. grs. v. ter die," as a diuretic, with bitter tonics and good diet.

June 13.—Patient feels more comfortable, and can lie on his right side; skin moist; no increase in diuresis.

June 19th.—Condition not improved; pulse, 80; respiration, 24; skin hot and dry. Physical examination indicated a reaccumulation of fluid. Pulsation of the heart still felt to the right of sternum, the patient lying on his back. Percussion resonant, to anterior edge of axilla, where it becomes flat. Dullness extends up the region of scapula, posteriorly. Puerile respiration on right side; bronchial respiration and broncophony on the left.

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* Calomel, squills and digitalis.

Operation of paracentesis repeated. Puncture made near to the first. Fluid would not run through the canula; about six ounces were obtained with difficulty by suction. The fluid was of the same density and color as that first drawn. Ordered, "Spts. Æth. Nitric. ʒj, ter in die."

June 20th.—Patient has been chilly occasionally during the day; cough not troublesome; decubitus chiefly dorsal; can lie on either side, more comfortably on the right; no excitement of cough by pressure on diaphragm. Pulse, 80; respiration, 24; skin hot and dry.

June 21st.—Patient passed an uncomfortable night, perspiring freely; urine scanty, not albuminous.

June 25th.—Paroxysms of hectic continued to recur; very slight increase in diuresis. A physical examination, made in the morning, indicated the existence of the effusion at the same point; there was complete dullness and faint ægophony at the surface of fluid. About 11 A. M., he was removed to an upper ward, and, in the afternoon, signs of pneumothorax were detected; the time at which the perforation occurred was not marked by acute symptoms.

Ordered, Quiniæ Sulphat. grs. v., Morphiæ Sulphat. grs. ¼ at night.

June 28th.—Patient felt more comfortably, but was evidently losing ground. Physical signs indicated circumscribed pneumothorax posteriorly. Metallic tinkling.

From this date the patient began to fail rapidly, refusing to rally under the most stimulating and nutritive diet. He died July 17th.

Autopsy, 8 hrs. P. M.—Rigor mortis well developed; body pale and much emaciated; no signs of decomposition, though the weather was intensely warm.

Thorax.—On raising the sternum, slight adhesions were found, posteriorly, to right lung, by recently effused false membrane. Left lung adherent, anteriorly, to the portion of sternum which covered it; left border of the heart in the median line. Ninety-six ounces of greenish serum distended the left pleural sac, the upper stratum of which was transparent, whilst the lower was turbid and purulent. On inserting a tube into the trachea, and thus inflating the lungs, no air escaped from the left lung, while the right became easily inflated; the left lung was very much compressed, being of not more than one-fourth the natural size.

Against the anterior mediastinum, occupying the upper portion of the pleural cavity, and extending to the diaphragm by a thin prolongation, the whole of the left pleura was covered by a thick false membrane. Right lung crepitant, normal in size and appearance, structure healthy; upper part of left lung hard and carnified, containing numerous small, yellow, tubercular deposits; the remainder of lung slightly crepitant, and free from tubercular deposits.

Heart normal.

The difficulty in obtaining fluid by the second operation, arose from the occlusion of the canula, by false membrane, as there must have been a large quantity of serum at the time of the puncture. The evident failure of vitality, without great increase of dyspnœa, made me think a further resort to paracentesis unnecessary. I could not ascertain, notwithstanding most diligent search, where the perforation of the lung had occurred. That this had happened, I could not doubt, so clear were the signs of pneumothorax for several days before death. It was not possible to have penetrated the lung with the trocar, so great was the distance at the point pierced, between the costal and pulmonary pleura. In this case there was evidently no benefit from the tapping. It is recorded that a fair judgment may be rendered as to its expediency in the disease.

Case 3.—W. F., æt. 19, a young gentleman of previously good health, and without an inherited predisposition to disease of the lungs, came under my observation, in consultation with Dr. B. W. Budd, of this city, in May, 1855.

For two or three months previously, he had been suffering with symptoms of severe bronchitis, preceded by dry cough, pain in the side, and dyspnœa. At the time of my visit there was great constitutional disturbance: pulse, 120—130; respiration, 30—40; copious, drenching night sweats; harassing cough, with abundant expectoration of thick muco-purulent matter. Pain in the left side had been a prominent symptom, and continued to be complained of, with inability to lie on this side of the body. There were well marked evening exacerbations of fever coming on every day.

Examination showed great emaciation of body; mind exceedingly irritable; obvious increased size of left thorax; left shoulder higher than right, except in forced respiration, when the reverse obtained; displacement of heart to right side of sternum; absolute dullness on percussion over whole of left side, with absence of vesicular murmur; bronchial respiration and ægophony at root of left lung; normal percussion and auscultation of right chest, except dullness, extending an inch to right of sternum, and puerile respiration.

June 22d.—The patient had been already judiciously treated by Dr. Budd, with the object of removing the fluid effused into the pleural sac. No absorption had occurred. On the contrary, the signs showed an increase in its amount, with the great constitutional disturbance above noted. Deeming a continuance of counter-irritants, absorbents, diuretics, and alteratives, of no probable benefit, an exploratory puncture was made by means of Charrière's fine trocar. On withdrawing the steel, no fluid escaped. Feeling confident that there was fluid effusion, I exhausted the air from the silver tube, when several drops of pus flowed from its extremity. I then introduced the large trocar of Schuh, and to my surprise, found it was again "dry tapping." I made sure that the canula was in the pleural cavity, by passing a probe through it to the depth of four inches. Adapting a flexible catheter to the outer end of the canula, and exhausting the air, sixty-four ounces of very thick, whitish, inodorous pus were evacuated. The fluid was nearly as thick as clotted cream, and flowed through the catheter with considerable difficulty.

The patient was so debilitated and nervous, that it was found impossible to perform the operation in the sitting posture. He was, therefore, laid on a cot, the body being drawn close to the edge of it. After the withdrawal of the above amount of pus, a small leaden wire bent on itself in the shape of the letter T, was introduced into the orifice made by the trocar—the arms, two inches in length, being kept in contact with the thorax by strips of adhesive plaster. He expressed himself much relieved after the completion of the operation.

In one hour, his pulse had fallen to 120; the respiration to 28 in the minute. The severe pleuritic pains of which he had previously complained so much, ceased to be felt. As he had been, for several weeks, in the habit of taking morphine as an anodyne and hypnotic, he was directed to have fifteen drops of Magendie's solution of the sulphate (grs. xvj. to f℥j.) in the afternoon.

June 2.—Has passed an excellent night. Very little cough; much less perspiration; no complaint of pain; bowels regular. Discharge from wound, during the night, has amounted to five or six ounces.

June 18.—The history of the case from the last date may be told by saying that the general condition has steadily improved. There has been no cough worth mentioning; the appetite continues good, and the alvine evacuations regular. Under the use of quinine and elixir of vitriol, the sweats have almost entirely disappeared. The solution of morphine which he has taken at bed-time to prevent nervousness and restlessness, has been gradually reduced to five drops. Pulse 100; respiration 20. Is anxious to go to the country.

In the month of August he left New York by the Erie Railroad, and went as far as Narrowsburgh by the cars, making twelve miles of staging in order to reach Honesdale. Here, he found himself very much exhausted by the fatigues of travelling, and had a recurrence of all his old troubles, such as hectic fever, cough, loss of appetite and great debility. He complained much of the wire, which was removed by Doctor Marsh, under whose judicious care he had been placed.

The opening made by me soon healed, and the symptoms were not of a promising nature, the case being regarded both by Doctor M. and myself as one of empyema complicated with tubercular affection of the lungs. In about two months, an abscess appeared under the left nipple, which discharged spontaneously, to the great relief of the pulmonary symptoms, and with marked relief to the general health. The amendment continued until the spring of 1856, when I saw him in New York, scarcely deserving the name of an invalid, the flow of pus having, for some time past, entirely ceased. Doctor Marsh's treatment had been of a tonic and supporting nature, avoiding as much as possible the use of drugs. In a troublesome chronic diarrhœa with which he had been taken whilst at Honesdale, he was relieved by ten drops, three times a day, of the solution of persesquinitrate of iron.

December 7th, 1857.—I have, lately, heard of Mr. F., and he is stated to have been for nearly a year in excellent health. His chest is somewhat flattened on the left upper part, but he makes no complaint whatever of illness.

Case 4.—Oates, aged 25; bricklayer; came to the College Clinic in April, 1856, complaining of cough, pain in the left side, and difficulty of breathing.

Of good hereditary history, but of intemperate habits, he had been healthy, until about twelve months before coming under observation, when he took cold from exposure to the weather, and was seized with cough, pain in the side, and dyspnœa. For a fortnight there was no expectoration. After that, it was noticed—colorless ærated sputa, at first, which subsequently changed to rather copious muco-purulent matter. Subsequently, lost flesh and strength—had night sweats—occasionally raised small quantities of pure blood by coughing; appetite variable; habitually oppressed and distended about stomach, after eating; pulse 120: respiration 36.

On physical examination, there were found dullness on percussion of left chest, displacement of heart to right mammary region; absence of normal respiration on affected side, its place being taken by that of a bronchial character; voice ægophonic, especially in interscapular region; puerile breathing and natural percussion over right half of thorax, except the dullness caused by the displaced heart.

April 23.—The patient's condition the same as at last note, except that the legs and abdomen were very dropsical. No albumen in the urine, which was scanty. As the usual alterative, diuretic and counter-irritant treatment had been vainly employed, the operation was performed with Wyman's pump, and forty-four ounces of thick yellow inoffensive pus were withdrawn. The tapping was not at all complained of by the patient, who sat up in a chair during its performance. The puncture was made in the seventh intercostal space, below and to the left of the nipple. Towards the close of the flow of pus, there was cough and a sense of discomfort, which caused me to discontinue the removal of fluid, long before the pleura had been emptied. Puncture closed by plaster. To take iodide of potassium, and to have support.

May 14th.—For a week or ten days after the tapping, there was great relief to the urgent symptoms under which he labored, when first seen. Subsequently, however, they returned, and thoracentesis was again performed. The benefit was not obvious on this occasion. His troublesome symptoms became more marked, the dropsy recurred to a great extent in the lower extremities; asthma increased, and on the twenty-fifth of the month, he died. No post mortem examination could be procured.

Note.—The man's hereditary history was taken from the statement he made at the Clinic. I have since learned from Doctor James O'Rorke, that Oates had lost a brother and two sisters of undoubted pulmonary tuberculosis.

Case 5.—Philip Lynch, æt. 19, footman, of previous good health, and without hereditary predisposition to disease, was taken with symptoms of acute pleurisy of the left side about the end of August, 1856.

He ascribed his illness to a prolonged sea bath, taken whilst overheated by previous brisk exercise.

The patient first came under my notice towards the beginning of October, of the same year, when I found that he had been under treatment, about six weeks, for kidney trouble and inflammation of the lungs. So far as I could gather from questioning him, the attack had been one of ordinary pleurisy with effusion.

He had already been treated with mercurials, blistering, purgatives and diuretics by the gentleman who had prescribed for him, but without benefit. The following was noted as the result of physical examination on the 11th of October.

On inspection, evident increase of size of left chest, with abnormal fullness of the hypochondriac region of the same side. Pressure under the left margin of ribs increased the dyspnœa, already habitually great. The heart's apex was immediately under the right nipple. No expansion of chest in intercostal spaces of affected side, on forced inspiration. Percussion very dull over whole of left thorax, extending one inch to right of the median line. Respiratory murmur absent from left chest. Bronchial respiration and broncophony, on cough or deep breathing, in left interscapular region.

The right side presented nothing but the phenomena of puerile respiration, with a little subcrepitant rhoncus at the upper part. No alteration of percussion note, no vocal signs of disease.

His general health at this time had become much impaired. He had lost flesh and strength; his appetite had failed, his bowels were torpid; kidneys inactive; had a habitually quick pulse, with hectic fever and perspiration at night; cough, with muco-purulent expectoration, moderately abundant; considerable œdema of lower extremities and of affected side of chest; inability to lie on right side.

Having, for several days, tried to influence the amount of effusion and the troublesome symptoms dependent on it, by the pill of squill, digitalis and calomel—by the use of counter-irritants and by diuretics; and finding that no amendment, but rather an increase of disease was the result, I decided to remove the fluid mechanically. Accordingly, the small exploring trocar having been introduced in the seventh intercostal space, under the angle of the scapula, whilst the patient lay in bed, a flow of pus followed the removal of the instrument. In the usual manner, Doctor Wyman's exhausting pump was adapted to the canula, and *seventy-eight ounces* of dirty looking pus, having the color of pea-soup, but without fœtor, were withdrawn. No complaint was made, during the flow of pus, nor was there any discomfort to the patient, beyond the trifling pain caused by incising the skin preparatory to introducing the trocar. It was not found necessary to tighten the roller bandage, which had been placed round his chest, until the instrument had been finally withdrawn, and the adhesive plaster placed over the puncture. After the operation, the breathing became easier and less frequent; the pulse was unchanged, 120. The heart came so much to the left, as to beat under the sternum. There was resonance on percussion, as far down as the sixth rib, with bronchial respiration and broncophony. No trouble in lying on right side.

To take three times a day, five grains of iodide of potassium, and to have milk, hominy and soup for diet.

For several weeks, there was an amendment in all the symptoms in Lynch's case; but about the middle of December, from reaccumulation of fluid, it became necessary to remove it once more. This was done with an ordinary trocar and canula, the opening being made under the axilla, in the eighth intercostal space. About *eighty ounces* of the kind of pus already described were removed, and free admission of air to the chest allowed. To keep the orifice open, a piece of small lead wire bent in the form of T was introduced into the opening with strips of adhesive plaster placed over the arms, in order to keep it in its place. It was thought that this would ensure the free flow of pus, without producing an inconvenient amount of irritation. He was ordered a generous diet, cod liver oil and porter, and to continue his iodide of potassium.

There was the same relief afforded by this operation as had been experienced from the former. The pus continued to flow abundantly, but soon became so fœtid as to require the use of Labarraque's Solution, frequently applied, to render the air of the small room in which he lay, supportable to his attendants. He complained also, of the soreness produced by the lead, after several weeks, and finally removed it. In the course of about a month I found signs of reaccumulation of fluid (the orifice having healed), and thought I would pass a lead wire through an intercostal space, by means of a trocar, similar to those used in puncturing the bladder, per rectum, which instrument, by taking a long stitch between, and in the direction of the ribs, would enable me to have a loop of the wire as a kind of drain for the flow of pus. The operation was easy enough in performance, but in the course of a week so much inflammation of the subcutaneous cellular tissue resulted in its neighborhood that I was forced to withdraw the wire. Pus continued to be discharged from the opening thus made, and did not cease to flow until the final cessation of the discharge in September, of the present year, when there was no appearance of disease beyond the collapse of the side—a certain loss of resonance on percussion, and weak vesicular murmur. Cough and dyspnœa had entirely disappeared, the appetite had returned; the pulse was natural in frequency, and the patient was anxious to return to service. At one of my clinical lectures during the month of September he was able to walk without difficulty.

from his home in Hammersly street, to the University Medical College, and back again.

I have omitted many details in the history of this patient. At times he was so debilitated and suffered so greatly from hectic, and anasarca of the inferior extremities, that several gentlemen who saw him for me, unhesitatingly told me that he could not live more than a few days. I must confess, that on several occasions I expected him to die before my next visit. He passed nearly the whole of last winter in a small uncomfortable garret, heated by a red hot stove, and in a room which served as kitchen, laundry, parlor and dormitory for his father's family. During much of his illness, he expectorated very copiously, thick, muco-purulent matter, especially when the external flow was checked. I thought several times, that there must be pleural fistula, but careful examination always failed to reveal any physical signs of such a lesion.

This copious expectoration I have observed in other patients similarly circumstanced. I have never found it to continue after the withdrawal of the contents of the pleura, and have never been able to make out perforation of the serous investment of the lung. These cases have recalled to my mind an observation made to me by Doctor Stokes, to the effect that in empyema, he had seen instances in which a metastatic secretion from the mucous membrane of the bronchi seemed to take place.

Case 6.—James Clive, aged 23, saddler, born of healthy parents, was admitted to Bellevue Hospital, August 31st, 1857. Has lost two brothers and a sister with pulmonary consumption. Has been a moderate drinker.

Was healthy and strong until 1848, when, being on his way to New York, from Ireland, had an attack of typhus fever. From this he recovered and was not again ill until the winter of 1855–56, when he was taken with acute articular rheumatism, lasting fourteen weeks. One week after the affection of the joints was observed, was seized with some pain in præcordial region, and difficult breathing, amounting to orthopnœa. From the rheumatic and other troubles, he states that he entirely recovered, with the exception that he has never been free from palpitation and dyspnœa, on unusual muscular exercise.

About the beginning of May last, he took a cold and cough, and suffered from pleuritic stitches in the right side. The cough had been dry and unattended by any sense of relief. A month later, he found himself suffering much from dyspnœa, and could lie with comfort only on the right side. Within the last twelve days he has grown very much worse. Debility has increased; respiration is almost impossible, except in the erect posture; sleeps uneasily, and but little; has had very profuse night sweats; anorexia almost complete; urine small in amount, and densely charged with urates and phosphates.

Physical Examination.—Pulse and respiration much accelerated; face anxious and covered with perspiration; eyes prominent and staring; right chest enlarged one inch more in circumference than left; heart's apex but three inches to left of nipple of same side; whole right side dull on percussion; the dullness extending two inches to left of median line. Bronchial respiration and broncophony at upper half of right chest; strong puerile breathing over left lung; harsh murmur, systolic over heart, most marked at apex, but heard *over the whole thorax;* pulse small and weak.

To calm the nervous restlessness under which he labored, and to procure sleep, a mixture of tincture of hyoscyamus and sulphate of morphia was ordered by the house physician. This seemed by the next day, to have afforded him some relief, when he was put upon diuretic doses of the iodide of potassium, with fifteen drops, three times a day, of syrup of iodide of iron.

Sept. 9th.—Finding that the dyspnœa and sleeplessness, with the night sweats and debility had increased, notwithstanding an increased flow of urine, now slightly albuminous, I concluded to perform the operation for removing the fluid in the chest. There was a constant sensation of choking whenever the patient attempted to lie down to sleep. The pulse was 120, very weak and small; the respiration 48.

In the usual way, by means of Wyman's apparatus, *eighty ounces* of clear serum were withdrawn—the patient lying on the back in bed, supported by pillows placed under the shoulders. During the flow, he complained somewhat of weakness, of which he was readily relieved by drinking brandy and water. When the amount mentioned had been slowly pumped out of the pleural sac, there was a disposition to cough, and complaint was made of a sense of oppression in the chest. The roller bandage was snugly tightened round his thorax, the puncture covered by adhesive plaster, and one quarter of a grain of sulphate of morphine administered. During the operation the patient became much relieved, and at its conclusion was enabled to take a long breath, without trouble or discomfort.

September 15th.—Since last date Clive has rested quietly and slept perfectly well. As a diuretic, he has used, three times a day, five grains of carbonate of ammonia. This has acted very well; but on examination, to-day, there was found to be so much fluid reaccumulating as to induce me to repeat the tapping. This was done as before, in the seventh intercostal space, under the anterior wall of the axilla, and *eighty ounces* of the same kind of transparent albuminous serum as before, were removed. Before the operation, the pleura was filled up to the level of the nipple, although the heart was much less displaced than on the former occasion. Great relief followed the paracentesis.

September 22d.—Patient has slept well, but grows weaker. The heart sounds as mentioned in first note; under the diuretic treatment, the fluid was so much diminished as to require no repetition of the pump. Normal respiration and percussion note to within four fingers' breadth of the base of the lung, posteriorly.

Sept. 30.—Patient died by asthenia, the respiration remaining easy; but the tumultuous action of the heart continuing to the last. Unfortunately, the prejudices of his relations prevented a post mortem examination from being made.

In this case, which was shown in the course of my clinical lectures, every one was struck with the extraordinary evidence of distress furnished by the patient's face and manner, no less than by the almost immediate relief and comfort that attended the removal of the serum. Nothing more than palliation was intended by the operation; and certainly no intention could have been more promptly and satisfactorily answered. It seemed somewhat singular that so little trouble should have been caused by reaccumulation of fluid, between the first and second tapping, when account was taken of the amount of compression of the lung necessarily resulting from the presence of so much liquid. I have, in other instances, been struck with the fact that the subsequent difficulties are not nearly so marked as those which have preceded the first abstraction of serum, even when the amount of fluid secreted has been apparently as great.

Case 7.*—John Colbert, aged 26, hatter, admitted to Bellevue Hospital, September 9th, 1857. Parents living and healthy; habits intemperate, being almost always drunk from Saturday night till Monday morning, and frequently during the week.

Had never complained of illness until three months before admission, when he was taken with acute pain in the right side, severe cough, and copious expectoration of bronchitic character. For these ailments, he was treated at a dispensary, and was enabled to resume his work in a week.

Three weeks later, exposure to cold, after a debauch, gave him a stiff neck, and brought back the cough of which he has not since been free. He continued at his trade until about the last of August, gradually losing appetite and strength, when he was forced to give up work. Dyspnœa, of which he had complained somewhat previously, increased in a marked manner after this. His bowels have been costive—urine very scanty. A gonorrhœa of six weeks' duration is yet uncured.

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* Reported by Dr. E. W. Lambert.

On admission, his face was cyanotic and anxious; pulse and respiration much quickened; dyspnœa so great that he has not lain down to sleep for a week; stridor accompanying inspiration and cough, which was frequent and dry. Very great distention of right chest, which measured, at level of nipple, twenty inches—two inches and a half more than the left; displacement of liver and of stomach downwards, and of the heart's apex, which beat three inches to the left of the corresponding nipple; very marked prominence of the right infraclavicular and mammary regions. Complete dullness on percussion over whole of right chest, extending three and a half inches beyond the median line. Vocal vibration strongly marked over left side; absent over right; no vesicular murmur where dullness was noted, except that transmitted from right lung, which was puerile; bronchial respiration and broncophony audible at summit of lung on affected side. No abnormal heart sounds.

Having had death suddenly occur from laryngismus in a very similar case (*N. Y. Medical Times*, vol. iii., p. 112), I decided, at once, to resort to thoracentesis for the man's immediate relief. Having propped him up in bed, with pillows, the instrument of Wyman was used, the puncture being made in the fifth intercostal space, midway between the sternum and spine. *One hundred and ten ounces* of bloody serum were slowly pumped out. With the evacuation of this, respiration became tranquil and easy; the mammary, hypochondriac, and epigastric fullness disappeared; the heart's apex approached to within a quarter inch of the nipple; the cough and stridulous breathing ceased. Towards the close of the operation, there was slight return of cough and feeling of oppression, referred to the sternum, of which so many have complained, when a certain amount of fluid has been discharged. The trocar was now withdrawn, and the puncture covered with adhesive plaster. During the tapping, no complaint had been made of pain; but constant expressions of relief were uttered. He asked for a drink of brandy and water, rather because of his attachment to the mixture than from any sense of faintness. The bandage was snugly applied to his chest, and he was put to bed, with direction to have a dose of morphine, at bed-time. Pulse 96; respiration 24.

September 15th.—No return of any trouble for nearly a week, when dyspnœa was observed, but in a comparatively slight degree. The kidneys, under the diuretic action of the carbonate of ammonia, administered as in case VI., secreted abundantly for several days. Has slept well and been able to eat and digest his food. Physical examination showed that there was still a large quantity of fluid in the pleura. The dullness did not extend beyond the median line; apex of heart immediately under left nipple; right chest measured twenty inches, the left eighteen and three-quarter inches; pulse 96; respiration 24; has had no stridor of voice, cough, or inspiration since tapping; is able to lie on his back without any difficulty.

Operation repeated as before; *eighty ounces* of similar sanguinolent fluid removed. Morphine and carbonate of ammonia as before.

September 22d.—Progress since last date perfectly satisfactory. Thinks he is "as well as ever," and would like to go out. Physical signs denote the existence of a certain quantity of fluid, and the heart has only changed a little to the right. Operated and withdrew twelve ounces of the same kind of liquid as was previously met with.

September 29th.—Went out to resume his occupation.

October 6th.—Readmitted, to see if there was necessity for another operation. Examined by Professor A. Clark. Respiration heard over entire right chest, posteriorly, and as far down as the fourth rib in front; no dyspnœa; no cough; each side measured eighteen inches.

December 5th.—Has not returned to Bellevue, as he promised to do, in case of any relapse.

The source of the blood noticed as coloring the serum was not ascertained. When the man first came under observation, I was inclined to think it might be due to some cancerous growth near the root of the lung. The marked and apparently permanent amendment would make this theory highly improbable. Finally, it was considered due either to hæmorrhagic pluerisy of the ordinary kind, as nothing in the history of his case pointed to personal injury by violence having given origin to it. The fluid was carefully analyzed by Dr. H. B. Sands, and nothing but blood corpuscules and epithelium found. So great was the quantity of albumen that, on being allowed to stand, after withdrawal from the body, it formed a solid cake, as perfectly moulded in the bowl, as we see isinglass jelly from a confectioner's form. The result of tapping in this case disappointed my prognosis, which was unfavorable, on account of the man's drunken habits, the nature of the fluid, and the state of extreme distress in which he was at the time.

Case 8.—Bartow R., aged 15, with no hereditary tendency to disease, and of previous good health, was taken with measles about the first of May, 1857.

I saw him on the 10th of July, in consultation with his attending physician, Doctor Barber, of East Brooklyn, and Doctor Francis U. Johnston, Sen.

From the measles, our patient had recovered sufficiently in a week to be out of bed; but had not got well of the cough attending the exanthem. The weather was wet and cold, giving rise, it was thought, to an attack of catarrhal croup, of which he was relieved by an emetic of ipecacuanha. On the following day he was seen by Doctor Barber, who found him complaining of cough, without expectoration, pain in the right side, and fever. These symptoms continued until my visit, with no change, except that the fever was marked by evening exacerbation, and that, for the last three weeks, he had raised a good deal of muco-purulent matter, with his cough. This occurred frequently, and came on in suffocative paroxysms. For a few days after he continued to expectorate; the sputa were of ordinary colorless, aerated mucus, streaked with blood; during the last ten days they have had a greenish yellow color, are quite offensive, and amount to a pint in twenty-four hours. He has lost twenty pounds in flesh since the commencement of his illness. Night sweats, for a month, have been very profuse. Dyspnœa extreme; pulse 140; respiration 30; unable to lie on left side from feeling of suffocation. Bowels moved regularly every second day; urine free.

July 10th.—Right side of chest obviously larger than left; no intercostal motion, on inspiration; dull percussion from clavicle to below margin of ribs; over lower two-thirds, no respiratory murmur; above this, bronchial respiration, and ægophony; liver and stomach displaced, downwards. On left side healthy percussion note and vocal sound; puerile breathing; exaggerated action of intercostal muscles.

With Wyman's apparatus, the patient lying on the edge of the bed, a puncture was made in the sixth intercostal space, midway between spine and sternum and *forty ounces* of greenish-yellow, offensive pus were discharged, the fluid resembling very much that which he has expectorated of late. During the operation there was no sense of discomfort, and the dyspnœa became much less marked. The roller bandage placed around his chest was not tightened until after the trocar had been removed. His excessive debility and difficult breathing rendered it necessary to supply him with wine and water several times during the early part of the tapping. After it was over, he expressed marked relief, and was enabled to take a long breath without trouble.

I did not think it advisable to allow a free discharge of pus from the opening made, on account of the extreme condition of prostration to which the patient had been previously reduced. I wished him to have a few nights of refreshing sleep, and to gain a little more strength before making a permanent fistulous opening. Ordered to be well fed with nourishing soups and to have milk punch every day. Iron and bark as tonics.

July 15th.—Much better in every way; appetite improved; breathes freely; sleeps comfortably on sound side; night sweats less copious; no suffocative cough; expectoration unchanged, except diminished in amount; pulse 135. With the trocar of Schuh, I withdrew *twenty-six ounces* of pus, similar to that first removed. The opening was again closed as on the former occasion, and the supporting and strengthening treatment advised. Relief of cough and dyspnœa.

July 22d.—Improvement continued until the 19th, when I found a decided change for the worse, as regarded pain in the side, cough, expectoration and dyspnœa.

A puncture was made with an ordinary trocar, at the same point that had been chosen on the former occasion, and *forty-eight ounces* of pus were discharged. The odor, although unpleasant, was not fœtid, as at first. Having no lead wire, I had procured some of the fine silver threads used by Doctor Sims in his plastic operations, and doubling them until they were as large as a common tent, I bent them into the T shape, and introduced the stem into the opening made by the trocar. The arms were secured in the ordinary way, with adhesive strips, and the roller bandage applied to the thorax. Great and immediate relief ensued.

July 26th.—Amendment continues; no dyspnœa worth mentioning; cough very trifling; sputa colorless, aerated mucus; sleeps well; sits up, and can walk across the room unassisted; appetite and digestion good; pulse 130; pus discharged from fistula laudable, without unpleasant odor; no inflammation around wires. Continue the same treatment and see that the orifice be kept well opened by the daily introduction of a probe, if necessary.

September 6th.—Pulse 120; respiration 30. No night sweats; no cough for a week past; appetite and sleep healthy; is able to take a long walk or ride without fatigue or inconvenience. Has been troubled only once by the chest symptoms, when apparently something obstructed the flow of pus. The introduction of the probe freed the opening and relieved him of the cough, expectoration, and dyspnœa.

Chest much collapsed on right side, especially flat in infraclavicular and mammary region; smaller in circumference than left side; left shoulder an inch higher than right; comparatively dull percussion over affected side; bronchial respiration and broncophony at upper half; puerile breathing over left lung. To continue the general treatment formerly ordered.

December 8th.—Has increased to within ten pounds of his ordinary weight; no cough; no expectoration; no return of night sweats; has occasional heat of skin in the evening; no dyspnœa, except on exertion; sleeps well; appetite good. Bowels regular and urination free; discharge of pus averages four ounces in twenty-four hours; is not fœtid; pulse 108; respiration 30.

Considerable deformity from lateral curvation of the spine, consequent on the caving in of the right chest. This measures an inch and three-quarters less than the left, on a level with the nipple. The right shoulder is two and three-quarters inches higher than the other. Left chest, which seems, on inspection, to perform almost all the respiration, resonant on percussion; respiration full and free; no morbid auscultatory sounds. Dullness over lower third of right side with broncophony and harsh respiration in front and behind; laterally no respiratory murmur. This is distinctly heard over upper two-thirds of affected side. To continue analeptic treatment, and to take cod-liver oil, if the stomach will tolerate it.

I ascertained that occasionally the orifice when the wires were inserted, would become temporarily occluded by inspissated pus. It was always easy to free it by a probe or by moving the tent. The discharge of pus invariably relieved the feeling of uneasiness, dyspnœa, and tendency to cough which had previously existed. The wires have not been removed for nearly five months.

In this case I should fear the complication with tubercles and a fatal result, had I not cases III. and V. to encourage me. The constant quickness of the pulse noted in the present instance was a marked feature with them, and yet, they were favorable in the end. Although I cannot report the patient as cured, I must, nevertheless, claim for the operation an entire propriety, as both Doctors Johnston and Barber were persuaded that it was the means of averting a speedily impending fatal termination.

I have been led to publish the preceding cases with the hope that their perusal may induce a reconsideration of the opinion entertained by not a few physicians, that the disease whether attended by serous or purulent effusion would do better if left to time and the chance of spontaneous opening, after failure to effect resorption of the fluid by means ordinarily employed. The cases have been recorded as they have come under my observation, without any selection.

In a recent number of the *London Medical Times and Gazette* (No. 7, 1857), Dr. Barlow stated that "his faith in the usefulness of thoracentesis had very much waned of late. The majority of cases in which it was adopted would, he believed, do equally well without it." It is only by a faithful relation of cases in which it has been employed, that we shall be enabled to assign the true therapeutical value to the operation. In those here recorded, I am confident that it was the only means of giving relief to persons who were in danger of dying by constantly increasing accumulation of fluid, which all other remedies had been inadequate to prevent or to remove.

It seems to me that in cases where we certainly know that pus is contained in the pleural sac, we should look favorably on thoracentesis. In instances of serous effusion, there may be a difference of opinion; but in the former, I should imagine that no physician would expect much beneficial result from the ordinary routine practice which has been spoken of as unsuccessfully used in some of the foregoing histories. The time is now passed when we can surely make a diagnosis by general symptoms, which will let us know the nature of the fluid in question. In the same number of the Medical Times and Gazette from which I have just quoted, mention is made of a case under Dr. Risdon Bennett's care, in which a large pleuritic effusion, of three month's duration, had not in any way been benefited, although "mercurials have been cautiously but fully used, as well as squills, broom, and other esteemed diuretics. * * * * Drs. Barker and Bennett met in consultation, three weeks ago, as to whether the chest ought to be relieved by puncture, but were of opinion that it would be better not to interfere. The man is kept in bed, and suffers remarkably little inconvenience."

Physicians who have seen much of pleuritic exudation, as here considered, will not fail to recall instances in their own experience, where the same conclusions have been come to, and where there were differences of opinion as to the kind of fluid contained in the chest. I scarcely know why any doubt of this nature should have been suffered to exist so long. I do not think the operation of puncturing the chest with Wyman's small trocar, or that of Charrière, any more serious than that of scarifying a child's gums. Surely any medical man would feel much more satisfied in his therapeutical course, if he knew positively whether he had to deal with pus or with serum. The truth is, I suspect that the old traditional fear of opening the pleural sac from without, has deterred practitioners from the performance of what is, in reality, one of the very simplest operative procedures, whilst it is one entirely devoid of danger.

A few weeks ago, a gentleman who had suffered from pleurisy was referred to me for examination—a difference of opinion having been expressed as to the existence of effusion. I not only decided that there was fluid, but punctured the pleura with Wyman's trocar, and sent back to the patient's physician a two ounce vial filled with the serum thus withdrawn. Five minutes were not consumed in the operation; scarcely any pain was complained of, and he was enabled, immediately afterwards, to proceed to his home in an adjoining State.

In selecting a material for keeping open the fistula where pus has been withdrawn, I know nothing at all comparable with the bundle of fine silver wire, used in Case VIII. It produces almost no irritation; the interstices between the filaments serve as drains, and it may remain for months, without requiring to be removed.

With reference to the posture of the patient, I am sure that the horizontal one is much to be preferred. Formerly, when they sat up, I saw more frequent disposition to syncope, to troublesome cough, and to the unpleasant post-sternal oppression, of which they nearly all, sooner or later, complained, as the pleura was evacuated. The only bandage I find necessary is a simple roller, four fingers' width, passed three or four times around the chest. Usually there is no necessity for its use until the close of the operation.

As is the case, generally, I advocate the careful exclusion of air in cases of serous effusion, and a permanent fistulous opening where the fluid is purulent.

34 East Fourteenth street.

Art. III.—*Case of Cancroid Ulcer of the Os Uteri—Excision of the entire Cervix—Recovery.* [With an Illustration.] By C. E. Isaacs, M.D., Consulting Surgeon to Kings County and Blackwell's Island Hospitals, etc.

On the 29th of May, 1857, I was requested by Dr. F. A. Thomas, 759 Third Avenue, to visit with him in consultation Mrs. ———, a married lady, about fifty years of age, and the mother of several children. I found her to be a person of rather thin, spare habit, and of delicate constitution. The countenance was expressive of long continued suffering, and the complexion exhibited somewhat of the slightly yellow, waxy appearance, so often seen in those who are the victims of malignant disease. Menstruation had ceased five years previously. She had been confined to her bed since September last, and had been under the care of different practitioners, without much benefit. For many months past she had complained of frequent, severe and dragging pains in the lateral and inferior regions of the abdomen, pain in the cervix uteri, a slight inodorous leucorrheal discharge, pain and heat on the top of the head, indigestion and constipation, obliging her to resort often to purgatives. The tongue was furred, and there were occasionally febrile symptoms, etc.

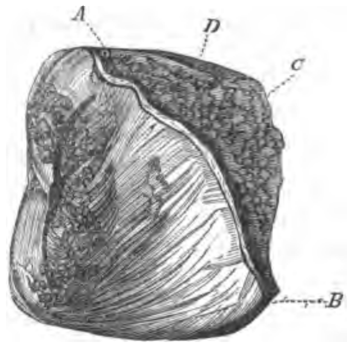
On examination by the speculum, I saw an oval-shaped ulcer, with everted edges, nearly the size of a ten cent piece, elevated about the eighth of an inch above the surface of the os uteri, upon one side of which it was situated. This ulcer was smooth, entirely destitute of granulations, insensible, and bled slightly upon touch. It resembled in some degree the outer surface of the convolutions of the fresh brain, when the pia mater has just been removed, but presented also a peculiar, partially transparent or glassy appearance. I showed this to my friend, Dr. George T. Elliott, of Bellevue Hospital, and also to Dr. Thomas. They both concurred with me in the opinion that it was malignant, and that it would be advisable to destroy it, if possible, by the actual cautery. This was accordingly done—the patient experiencing no pain or subsequent hemorrhage, or any other unpleasant symptom.

At the expiration of a month I made an examination, and found that the ulcer had again appeared, and presented the same size and character as before. I applied the actual cautery again, and at the end of two weeks found that it had reappeared—appearance unchanged. I then made a third application of the hot iron, and at the end of sixteen days found the ulcer larger than it was before. I now made another and final application of the actual cautery, much more deeply and profoundly than before, and at the end of another fortnight discovered, to my great disappointment, that the ulcer was now so large that it almost covered the entire os uteri; the edges were much more elevated and everted, and it bled upon the slightest touch. I removed a small piece of the ulcer with a pair of bullet forceps, and placed it under the microscope, when it presented most clearly and indubitably the appearances usually seen in specimens of cancroid or epithelial cancer. During the above period, the patient had been kept upon a tonic and supporting plan of treatment, the bowels had been regulated and her health had somewhat improved. I now explained to her fully the nature of her case, and that in all probability nothing could remove her disease, except the entire excision of the neck of the womb, but that I would advise a consultation of physicians to determine what should be done under these circumstances.

On the 10th of August she was seen by Dr. Sabine, Dr. J. C. Hutchison of Brooklyn, Dr. Thomas, and myself, when it was explained to the patient and her friends, that the complete removal of the disease, by extirpation of the cervix, although attended with considerable risk, yet afforded her the only chance of recovery. She at once consented, and having placed her fully under the influence of chloroform, I proceeded to perform the operation with the assistance of the above-named physicians.

The patient lying on her back with the hips near the edge of the table, I introduced a couple of very long and strong hooks (firmly fixed in wooden handles) very carefully into the vagina, protecting the soft parts with great caution, and placing the points of my fingers upon the sharp ends of the hooks until I was enabled to implant the hooks *firmly and deeply* into the substance of the uterus, at as high a point as the reflection of the vagina would allow. I then drew down the cervix very slowly and with great caution.

This I found to be a very tedious and difficult part of the operation. The cellular tissue had apparently become condensed, by the actual cautery, and the parts yielded very slowly and reluctantly to traction. At length, after some effort, I succeeded in dragging down the cervix, so that a considerable portion of it was outside the vulva. With the view of protecting the inferior wall of the bladder from injury, I then made with a scalpel a curved incision an inch long, across and through the mucous membrane of the vagina, which covers the superior surface of the cervix. This incision enabled me to push with the finger and handle of the scalpel the mucous membrane from off the superior surface of the cervix, back to the point where I wished to excise it. (See plate.) I now placed around the cervix the écraseur of Chassaignac at the desired point of division, but found, after repeated trials, that from some imperfection the instrument would not work, and threw it aside. I then introduced above the intended point of section or division, a pair of large, strong, and slightly curved scissors, and cut through one-half of the cervix, cutting from above downwards. Three or four small arteries bled freely, requiring the ligature. I next divided the remaining half of the cervix with the scalpel. Two or three small vessels were then tied. I then brought down the *stump* of the uterus with the hooks, which still remained *in situ*, and as this bled considerably from many very small vessels, I applied to the bleeding surface the actual cautery.—The hemorrhage then ceased.



From *A* to *B*, line of incision through the mucous membrane, and from which it was pushed back from the denuded surface of the cervix, as far as to the point of vertical incision, *C*. *D*, superior edge of cervix, corresponding to the inferior wall of bladder.

The hooks were now removed, when the uterus immediately ascended into its usual and previous position. The loss of blood amounted to a few ounces only, yet the patient was somewhat prostrated, but soon rallied under the use of the ordinary stimulants. There was a slight oozing of blood, perhaps to the amount of an ounce during the night.

No unfavorable symptoms afterwards occurred, although the patient, from motives of prudence, was confined to her bed for four or five weeks, occasionally sitting up for a short time during the day.

Since then, she has gradually greatly improved in health, and is now able to take long walks, and ride several miles about the country, etc.

The severe dragging pains and other symptoms referable to the uterus have entirely disappeared, but she is occasionally still somewhat troubled with derangement of the functions of the large intestines.

On examination with the speculum, I find the vagina (which is naturally very long) terminating in a conical cul de sac, at the end or bottom of which, is a small rounded button-like mass, about as large as the end of the little finger, of a slight pinkish grey color, and apparently healthy. This is all which remains of the cervix uteri.

I may here mention that immediately after the operation, I examined the cut edge of the removed cervix under the microscope, and found it to be perfectly healthy. Not a trace of the disease could be found at that point, nor within three-fourths of an inch of it.

Considering the fact that the entire cervix uteri was removed, and that cancroid cancer is less liable to return than any other form of malignant disease, may not the operation be considered as in all probability permanently successful?

ART. IV.—*On Irregular Development of the Infantile Cranium, and the Etiological and Prognostic Importance of the Premature Closure of the Fontanels.* By A. JACOBI, M.D., Physician to the Children's Department of the German Dispensary, etc., New York.

THE development of the various organs of the infantile body, generally proceeds in an equable measure. Only the skull, with its contents, seems sometimes to form an exception to this rule. Compared with the whole body, the infantile head is large; its blood-vessels are in due proportion to its size, and before the closure of the sutures, the blood-vessels of the brain and of its membranes, finding less resistance from outside pressure, are expansible in a higher degree than are those in other parts of the body. In consequence, then, of increased upward motion of the blood, we find that in children the development of the skull, jaws, and teeth, and the frequency of inflammatory and exudatory diseases of the brain and its membranes, go hand in hand; they are coördinate effects of the same cause. The bones of the infantile body develop themselves with the same equability as its other parts. Protracted teething, retardation of the closure of the fontanels, retardation of walking, usually coexist, and are not at all favorable symptoms, being but too frequently the first signs of rachitis. Nor is prematurity of teething, of closure of the fontanels, and of walking, very rare.

Exceptions to the rule, in which the skull is developed in proportion to the other bones, are frequently found. Their causes can hardly be defined. Both parental constitution and maternal blood are, no doubt, of some influence. This is, however, not without restriction, as robust children are frequently born of weak mothers, and *vice versâ.* Climatical and typical peculiarities seem also to account for some of the differences in the formation of the cranium. Thus, Edwards* asserts that in the West Indies the coronal juncture is broad, and remains open for a longer period than in cold countries. As to the custom of the natives, of pressing downwards the os frontis and os occipitis, he thinks it might be explained by the instinctive endeavor to effect an earlier closure of the fontanels and the cranial junctures in general. Schoepf Merei† thinks himself justified in assuming that the large fontanel closes later at Manchester, England, than at Pesth, in Hungary. Many similar facts are brought to light by comparative observations. Thus, we are informed by Mauthner,‡ that the skulls of Slavonian children are more compact, disproportionate, and clumsy, larger in every dimension, and more subject to hyperostosis, than those of Hungarians. And Gratiolet observed, that the cranial sutures close later in the white race than in the black one, and that the coronal suture, being the first to ossify in negroes, is the last to do so in Caucasians.

It is to be considered a law, that the incisors cut, before the closure of the large fontanel takes place, this being followed only by the ability of walking. In the average, the first incisors make their appearance at the age of six or seven months, the large fontanel is closed at twelve, walking ensues at thirteen months. By closure of the large fontanel, however, I do not mean its entire ossification, as this is consummated only with the third year. Some weeks after birth, the large fontanel has a size of a square inch, or nearly so; somewhat less in little and weak children, somewhat more in large and robust ones, and diminishes gradually. The closure of the fontanel is taken to be complete when the fibrous bridge between the osseous margins gives way no longer to the pressing finger, and no pulse can be felt through it. The fontanel is seldom closed before the first incisors have broken through; walking is rarely possible before the closure of the fontanel. Sometimes, however, I have seen children walk without a single tooth in their mouth. Merei relates the case of a child who walked at fifteen, had his first incisors at sixteen, and whose large fontanel had the size of about one-half of a square inch at nineteen months of age. Nevertheless, the child was lively, sensitive, not rickety—which seems fully to prove, that irregularities in the development of the osseous system may occur, sometimes, without any morbid symptoms.

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* L. A. GOSSE: *Essai sur les déformations artificielles du crâne.* Paris, 1855, p. 23.—EDWARDS: *History of the West Indies.*

† A. SCHOEPF MEREI: *On the Disorders of Infantile Development, and Rickets, Preceded by Observations on the Nature, Peculiar Influence and Modifying Agencies of Temperaments.* London, 1855, p. 116.

‡ *Entwickelungsanomalieen am Kinderschädel. Oesterreichische Zeitschrift für Kinderheilkunde,* Nov., 1856, p. 52.

The best evidence of a normal development is the regular appearance of the teeth. Eichmann* reports four hundred observations on dentition, from which he draws the following conclusions: The first inferior incisors break through between the 28th and 32d week; the first superior ones, between the 36th and 40th; the first anterior molar teeth, between the 48th and 54th week; the canine teeth, between the 16th and 18th; the first posterior molar teeth, between the 22d and 24th month. At 27 or 30 months there are 20 teeth formed; about this time, or shortly after, the large fontanel has finished its entire and permanent ossification.

Sometimes, however, and indiscriminately so with robust or feeble children, the first incisors cut in the fourth or fifth month. Merei reports the case of a child which had his first incisor at three months of age, and had fourteen teeth when eleven months old. In newborn children teeth are not frequently found. We are told† that Louis XIV., Richard III., and Mirabeau, were born with teeth; one case is reported by Churchill; in another case, Whitehead,‡ in order to facilitate suckling, removed from the inferior jaw of a newborn child two teeth, which were reproduced simultaneously with the appearance of the canine teeth. One case is reported by Fleming, one by Denman, nineteen by Haller. Nor are remarkable cases of unusually protracted dentition more frequent. Among Eichmann's 400 cases, there are a few, in which the first tooth cut at the twenty-second month; in a case reported by Churchill, it cut in the seventh year; and Merei knew a child whose large fontanel closed at four years of age, but whose mouth was still toothless at six.§ I have observed, together with Dr. Herzog, in the "German Dispensary of the city of New York," a child of twenty-six months, without a single tooth, and whose fontanel does not even begin to close. The record of the children's department of the Dispensary contains another similar case of a child two years old.

The following results of Eichmann's seem to be worthy of a particular consideration: Of 20 healthy and robust children, the fontanel was closed in 10 at from 11 to 13 months; in 5 at 13; in 2 at 14; in 2 at 10; in 1 at 15. In 14 of them, the first teeth cut at from 6 to 8 months; in 4 at from 8 to 9; in 2 before the 6th month. Consequently there is, in healthy children, an interval of from 4 to 7 months between the cutting of the first incisors and the closure of the large fontanel.

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* SCHMIDT'S *Jahrbücher der in-und ausländischen gesammten Medicin.* 1853, No. 12.

† FLEETWOOD CHURCHILL, M.D.: *Diseases of Infants and Children.* Second Am. Ed., p. 417.

‡ MEREI, p. 118.

§ L. C., p. 119.

Of 8 feeble or sickly, but not rickety children, the large fontanel was closed in 6 at from 11 to 13; in 2 at from 13 to 14 months of age. In 7 of them the first incisors cut from 4 to 7 months before the closure of the fontanel; in 1 the cutting of the first tooth, which took place at 13 months, was directly succeeded by the closure of the fontanel.

Of 8 rickety children, the fontanel in 3 was closed in the 13th month; symptoms of rachitis developed themselves immediately afterwards. The incisive teeth came at the regular time; the other ones too late. In 3 the closure of the fontanel took place between the 16th and 19th month, the first tooth having cut at 12 months, and being followed by the rest in rapid succession. In 1 the large fontanel was open at 19 months; the first teeth cut at the regular time, but at 18 months there were only 8 of them formed. In 1, rickety also before the 11th month, the fontanel was not closed, and the mouth toothless, at the age of 25 months.

The completion of the cranial sutures is often delayed in spite of a normal condition of the brain. Sometimes the ossification in newborn children is deficient; in such cases it may have started from the usual points, but the bones are thin, their periphery fibrous, or there are fibrous gaps in the osseous structure. Both the circumference of the skull, and the general development of the children, may be entirely normal in such a state of the osseous structure of the cranium. Sometimes, however, abnormities are found, as, for instance, hydrocephalus. In some cases the fault has been attributed to constitutional diseases of the parents, to pathologico-anatomical peculiarities of the maternal pelvis. Abnormal sutures also may be found, the ossa frontis, occipitis, temporum, parietalia, remaining each divided as in the fœtal state. Or there are the so-called ossa Wormiana, results of normal ossification, but proceeding from an unusual abundance of starting points, in groups of sometimes such a remarkable number, that Meckel met with and counted two hundred of them in one individual.

It is, however, the premature solidity of the cranial bones, which we consider as our special subject in these pages. Sometimes it is inborn, and the result of the inflammations suffered during fœtal life; in such cases an osseous elevation may be felt along the sutures. The size and symmetry of the skull depend upon both the advancement and seat of the ossification of the sutures, and the adjustment of those parts, which are not ossified. For the growth of the flat cranial bones, which commences from the sutural substance, ceases after the ossification is consummated; and the brain itself cannot increase its volume, except by forcing asunder the sutures, or by partial resorption of the inside of the cranium. As evidence thereof, we have the so-called teeth of the sutures and the digitated impressions.

The variety of forms of the cranium produced by the earlier or later, partial or total synostosis of all or some of the sutures is very large. For discerning these various forms, R. Virchow* has successfully adopted a terminology, similar to the one used by Retzius, for discriminating the varieties of races by skulls.

1. Macrocephali, large heads; general circumference of the head too large. Hydrocephali, waterheads.
2. Microcephali, small heads; general circumference of the head too small. Nannocephali, dwarfheads.
3. Dolichocephali, longheads.
    - *a.* Simple dolichocephali, synostosis of the sagital suture.
    - *b.* Leptocephali, narrow heads; lateral synostosis of the frontal and parietal bones.
    - *c.* Sphenocephali, cuneated heads; synostosis of the parietal bones, with elevation of the region of the large fontanel.
    - *d.* Clinocephali, saddleheads; synostosis of the parietal and sphenoid bones.
4. Brachycephali, shortheads.
    - *a.* Simple brachycephali, bigheads; synostosis of the parietal bones with the occipital bone.
    - *b.* Plagiocephali, oblique heads; synostosis of the frontal with one parietal bone. Where a considerable adjustment takes place: Platycephali, flatheads.
    - *c.* Oxycephali, pointed heads, sugarloaf heads; synostosis of the lambdoid and squamous sutures.

We have found, that ossification of the sutures leads not only to asymmetry of the cranium, but to the entire cessation of the growth of the cranial bones. The cerebral functions depend to a great extent upon the size and symmetry of the cranium; in cases of considerable diminution and asymmetry we are almost certain to find, that not only the intellectual faculties, but also those of locomotion and sensibility are injured. Convulsions, deafness and dumbness, failing of the sexual instinct are known to be frequent consequences of an early and extensive synostosis of the sutures. Where it is limited to one side or locality, an adjustment is possible in the direction of the yielding, unossified parts; in such cases the cerebral functions may be nearly or wholly normal. Other less favorable cases look like the one of osteosclerosis cranii, not long ago reported by Schützenberger.* The disease lasted about four years, before the continually increasing compression of the brain by the hard, compact, and eburnated cranium, succeeded in effecting the death of the patient, who had endured all his life frequently repeated faintings, a long series of epileptic and tetanic attacks, abnormal irritability, mental weakness, and, at last, idiocy.

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* *Verhandlungen der physicalisch-medicinischen Gesellschaft zu Würzburg.* 1851, vol. ii. 230.—1852, vol. iii. 247.—1856, vol. vii. 199.—R. Virchow: *Gesammelte Abhandlungen zur wissenschaftlichen Medicin.* Frankfort, 1856, p. 891.

With the only exception of the macrocephalic—hydrocephalic—form of the cranium, there is none which has been studied with so much eagerness and success, as the microcephalic one, particularly it its relation to the diminution of mental faculties. Baillarger† saw, in a village of southern Switzerland, three microcephalic idiots, whom their mother reported to have been born with their skulls perfectly closed and solid. Two other children of hers, who were well developed both bodily and mentally, had their large frontanel open for a long while after birth. Similar facts he learned from another woman, who was mother of one microcephalic idiot, and some other children of normal development. Furthermore, he describes the cranium, in his possession, of an idiotical child, 4 years old. Its dimensions are very small indeed, the largest circumference not being thirty-five centimetres. The coronal suture had disappeared entirely; not less so the frontal suture, the inferior part of which was indicated by an osseous prominence. Only the lambdoid suture was slightly discernible.

Similar cases have been observed by others. Vrolik, of Amsterdam, knew an idiotical boy of 7 years, whose cranial sutures had entirely disappeared. Cruveilhier reports the case of a child 18 months old, without any discernible sutures. There was, besides, instead of the normal, external occipital protuberance and the semicircular line, a transverse, very sharp osseous prominence. The vertical diameter of the cranium was as short as one inch. There had never been even a vestige of intellectual faculties.

After all, premature cranial ossification, although there may be many other cases of idiocy, is deserving of every consideration. The normal human brain differs from the animal not only in its relative volume, but also in its growth. Besides, the fontanel of the human cranium is not found in animals, with the exception only of apes, who have, for a short time after birth, small and rapidly ossifying fontanels. Therefore, Baillarger, taking into consideration both the growth of the brain, and the premature ossification of the cranial sutures, thinks himself justified in comparing microcephalic idiots to animals. Gratiolet did not even stop here, but asserted, that there is a direct relation between the earlier or later ossification of the sutures, in the different races and types of mankind, and the height of their intellectual faculties. He states, as we have mentioned above, that the cranial sutures close later in Caucasians than in Negroes, and particularly, that the coronal suture ossifies early in Negroes, late in Caucasians. For this reason a proportionally late ossification of the coronal suture seems to be favorable to intellectual development. The high forehead also, of the Caucasian, and the low one of the Negro race are evidently depending on this physiological fact.

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* *Archives générales*, 1856. No. 8. † *Gazette des hôpitaux*, 1856. No. 91.

A frequent consequence of precocious synostosis of the cranial bones is epilepsy. In a great number of epileptics the form of the cranium is anomalous; in proportionally few cases it is too large, hydrocephalic; in most of them it is too small, and spherical or pointed. The most important characteristic, however, is asymmetry, the head appearing, as it were, compressed from a lateral, anterior or posterior direction. Among forty-three epileptics, recorded by Muller, of Pforzheim,* the heads of thirty-nine were asymmetrical; in the majority of them there was, besides, hyperostosis of the cranium. The older a case of epilepsy, especially if it dates from the first years of life, the more the cranium will be dense and eburnated. Epilepsy originating at this early age, is considered to be the most critical and incurable, leads often to, or is complicated with idiocy and shortens the duration of life.† I have been informed by Dr. Schilling, of this city, of the case of a girl, 8 years old, who has been suffering for some years past from epilepsy, which, led by anamnestical facts, he does not hesitate to trace back to premature synostosis of the cranial junctures. I have been attending for the last four or five months a girl of 15 years, whose menses are regular and pretty copious, who has been suffering since her second year, once, twice, or three times every day of her life from epileptic fits, which I can, by every possible evidence, attribute to the same cause.

Epilepsy is rare in new-born children—frequent after the first dentition. Hyperostosis of the cranium, particularly in cases dating from early childhood, seems also to prove, that too rapid and abundant ossification of the cranial bones, before the brain has attained to a sufficient growth, and the compression of the brain produced thereby, are among the causes of epilepsy. Every case of this kind is illustrated by Travers,* who reports the case of an epileptic boy suffering from compression of the brain which was caused by a particle of the fractured cranium. There was no other fit, after the fractured bone had been removed.

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* R. Virchow: *Handbuch der speciellen Pathologie und Therapie*, vol. iv. i. 268.

† Romberg: *Lehrbuch der Nervenkrankheiten*, p. 697.

According to Chazeauvieilh,† of sixty-six cases of epilepsy, eighteen occurred in the first lustrum, eleven in the second, eleven in the third, ten in the fourth, five in the fifth, four in the sixth, one in the seventh, two in the eighth, one in the ninth, two in the tenth, one in the twelfth: that is to say, more than twenty-seven per cent. come under the first five years, and probably even occur between the second and fifth year of life. This is just the period of infantile development, in which irregular ossification may begin to prove dangerous. For, as Romberg emphatically asserts, the orgasm of the brain, inclosed as it is in unyielding osseous walls, cannot but favor the transmission of remote irritations to the corpora quadrigemina and the oblongated spine, and thereby produce irregular reflected motions. On this principle, convulsions are the habitual consequences of cerebral hypertrophy, which is frequently combined, too, with hypertrophy of the cranium.

Every symptom in all the objects of the foregoing exposition can be explained, as it were, by a relative hypertrophy of the brain—that is to say, by a disproportion between the closed and narrow skull and the inclosed and growing brain. Such, however, is the similarity between the symptoms of some of the most different cerebral diseases, that a distinct diagnosis of the pathologico-anatomical alterations is not always easy, sometimes very difficult. Laennec,‡ in referring to Jadelot's remarks on the disproportion between skull and brain, has already acknowledged, that he made sometimes serious mistakes in the diagnosis of hydrocephalus internus. He confesses that in a number of cases he met with no water at all, but only with a remarkable flattening of the gyri, which seems fully to prove, that the brain was compressed by its volume being too large and its growth too active—and next, with an extraordinary firmness and elasticity of the cerebral substance. Next to Laennec, in 1824, Hufeland communicated to the profession his observations on cerebral hypertrophy, which he too declared to have often been confounded with hydrocephalus internus. It was he who established a new fact, met with in every such case, viz. the *cerebral hernia*—that is to say, he showed, that in every post-mortem examination, in these cases, the compressed, elastic brain springs forth through the incisions made into the membranes. He is, however, always speaking of an abnormally *large brain within a normal skull, of real cerebral hypertrophy;* and identical with his cases are those reported by Scoutetten, Meriadec, Laennec, Burnet, Papavoine, Cathcart Lees, Barthez, and Rilliet.

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* B. TRAVERS: *A further Enquiry concerning Constitutional Irritation and the Pathology of the Nervous System*, p. 285.

† *De l'Epilepsie considerée dans ses Rapports avec l'Aliènation Mentale. Arch. Génér.*, 1825, p. 73.

‡ *Journal de Médecine, Chirurgie et Pharmacie*, 1806, vol. xi., p. 669. *Revue Médicale*, 1828, *observations pour servir l'histoire de l'hypertrophie du cerveau.*

Some years ago, I had occasion to observe three unmistakable cases, the reverse of those treated of above—that is, *cases of an originally normal brain in an abnormal cranium,* this having remained *too narrow in consequence of premature synostosis of the fontanel and sutures.* This narrowness, however, was the only anomaly; for the process of ossification would not have been irregular at all, if it had ended some months later; there was no constitutional disease of any kind, not even a sign of hyperostosis, or of preceding inflammation. The three patients, who came under my observation in August, 1851, in the fall of 1855, and in August, 1856, were children—two ten, and one eleven months of age—the first one a male, the other two females. All of them were *well developed, had been robust and apparently always healthy.* The third one was said to have, in the last months preceding her death, from time to time, cried vehemently and suddenly without any manifest cause. In neither of these cases was it possible to perceive weakness of intellect, apathy, somnolence, and feebleness of the extremities, all of which symptoms Cathcart Lees considers as indispensable signs of genuine hypertrophy of the brain. In the first case it was stated that the child lost his habitual brightness and liveliness about a fortnight before the symptoms became severe; in the other cases, this failing could be observed but a day or two before symptoms of depression of the brain were visible. The children grew sleepy, almost soporous, the pupils enlarged; vomiting soon followed. From time to time, they exhibited, especially the third patient, light intermediate signs of irritation. Contractions of the extremities came next, and, in short, all the graver signs of depression of the brain. The soporousness increased so as to become complete unconsciousness, every sensual function being totally paralyzed; and at last, death ensued with clonic convulsions.

The picture I have given of this disease is the almost exact likeness of the *last stage of the inflammatory and exudatory* *diseases of the brain and its membranes in general.* Its distinct diagnosis is, therefore, sometimes impossible, and always difficult. The present state alone of a patient, who lies prostrate, with all the symptoms of depressed brain, will not enable a medical man to get a clue to what has preceded. Sometimes he will obtain anamnestical facts, the best of which is, at all events, *the knowledge of the condition of the large fontanel and cranial junctures.* In this manner, I was enabled to make an exact diagnosis in the cases of my last two patients. I found that in the children, ten and eleven months old, the large fontanel was entirely closed, and no pulse could be felt through it. In the last case, the parents, without any suggestive questions of mine, and only induced to do so by my examination of the fontanel, told me, that the fontanel of another child of theirs, who had died two years before, at the same age, and under the same symptoms, was also closed long before death.

In the first and the third case I was allowed to make a post-mortem examination. The result was alike in both of them. There was nowhere a pathological alteration to be found, except the *abnormal solidity of the cranium* and the following state: The cavity of the cranium was completely and compactly filled up by the brain; the membranes were pale. *No signs of inflammation or only hyperæmia.* The sinus narrow; *gyri flattened;* the substance of the *brain dense, elastic, difficult to cut;* of an apparently considerable specific weight. The grey substance was whitish; fluid not remarkable in quantity in the ventricles. There was *no disproportion* between the different parts of the brain, a symptom, which never fails in genuine cases of cerebral hypertrophy; this being but an increase of the white substance, while the grey one remains unaltered, and affecting neither the middle part of the brain nor the cerebellum, while the pressure of the unyielding cranium, when no adjustment has taken place, operates in every direction, and affects every part of the brain, which may be sound in every other respect.

The abnormal state of the cranium and the brain which I treat of, is almost overlooked by the best authors on diseases of children, Rilliet and Barthez. There is only a short notice in their book relating to premature closure of the cranium as being a cause of induration of the brain, and they seem to be so little aware of the intrinsic difference between induration of the brain and its hypertrophy, that they treat of both of them in the same short chapter (the fifth of their first volume.) So does Churchill, l. c. p. 178. Even Förster,* one of the most excellent authors on pathological anatomy, scarcely mentions our subject, so that in treating of "induration of the brain," he says: "Increased consistency of the whole brain, or total sclerosis, is a normal occurrence in old age, and of the same frequency, but less importance, in intoxication by lead, in typhus, cholera, puerperal peritonitis, scarlatina. Only in intoxication by lead where induration is combined with atrophy, it reaches such a height as to affect seriously the cerebral functions. In other cases the increased consistency of the cerebral substance is of some interest only when found in post-mortem examinations, and is usually produced by copious exudations, leaving the brain deprived of its parenchymatous serum. High degrees of total sclerosis are met with only in atrophy of the brain."

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* A. Förster, *Handbuch der pathologischen Anatomie,* ii. p. 427.

Cases of sclerosis of the brain are met with, sometimes, in reports on post-mortem examinations; cases, too, of premature closure of the cranial junctures have been communicated to the profession, but in very few of them has an attempt been made to elucidate the evident relation between these two anomalies. One very good observation was published, some months ago, by Prof. Mauthner, of Vienna.*

Case.—Mary F., 3½ years old, is said to have suffered, 1½ years ago, by convulsions, caused by a fall on the occiput. She has been sickly ever since. When taken to the hospital, she exhibited the following state and symptoms: The child is emaciated, feeble; hair of a light brown color, cranium remarkably small and hard, particularly so in the occipital region; the countenance has a suffering expression; lips and tongue are red. The child sucks her thumb continually. The abdomen is concave; the lower extremities are drawn to the abdomen; pulse thin and much accelerated; sleep restless. Evacuations dry, rare.

Treatment.—Four leeches on the mastoid region. Carb. Magn. to facilitate defecation.

Two days later, June 11th.—The child moans frequently; sleeps very little. No evacuation. Sulph. magn. ʒi., aq. ℥iii.

The following day one evacuation. Constipation again to the 16th, when jalap ʒss. was required to open the bowels. No change in the other symptoms, only the emaciation and feebleness of the patient are increasing. Three convulsive attacks, of only two or three minutes each, occurred during the night.

July 2d.—The child continues to moan and whine. Hands cyanotic; abdomen hard, somewhat inflated; skin dry. One convulsive attack in the morning. Sucks her thumb. Constipation of the bowels. Carb. magn. gr. x., aq. ℥ii.

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* *Oesterreichische Zeitschrift für Kinderheilkunde*, Sept., 1857, p. 561, *sclerosis cerebri ex microcephalia.*

July 5th.—The child is very low; has fallen off considerably.

July 14th.—Since yesterday ten thin, greenish-yellow passages, mixed with mucus. Hands cold. Dec. salep ℥ii., pulv. r. ip. gr. x., syr. simpl. ʒii.

July 18th.—Collapse increasing. Diarrhœa but little better. Pulv. Dov.

The child grew worse from day to day, emaciation going on in rapid progression; appetite lost; eyes hollow; face and extremities cyanotic; temperature of the skin low; passages not so numerous, but thin and mucous. After some days of constant sopor, the patient died on the 25th of July.

Post-mortem examination.—The corpse is very much emaciated; abdomen discolored, greenish, concave; the extremities are flexible. The cranium is of unusual compactness and smallness. The integuments being removed, the distance from the root of the nose to the external occipital protuberance is twenty-two centimetres, from one ear to the other 23½. The circumference of the cranium is forty-two centimetres. While the cranium is getting opened, a great deal of serum is escaping. *The membrane is thick, adheres firmly to the cranium, and can only with some difficulty be removed. The fontanels have disappeared entirely*, the *sutures* are found to have been *ossified long ago.* The left hemisphere is of very small size; its *gyri* are *hard*, of a dirty yellow color, showing signs of atrophy. Between the layers of the pia mater are four ounces of a thin dark serum, mixed with blood. The pia mater of the right hemisphere is slightly injected with blood. The *cerebral substance* is pretty *dense.* The right lateral ventricle is not dilated. All the *nerves* originating in the brain are of a considerable *toughness*, as well as the flattened gyri; pons and cerebellum are normal; *medulla oblongata very hard;* some fibrine coagulated in the longitudinal sinus. The cranium is as thick as one centimetre about the squamous part of the temporal bone. Its longitudinal diameter is 15 centimetres, the transversal 11½.

A very interesting and instructive case, which I was fortunate enough to observe only a few weeks ago, is the following:

Case.—George Z., of Forsyth street, eleven months old, a robust child, was not known to have ever been sick. He became restless and feverish on the first of November, with augmented temperature of the head and slight vomiting. His parents, believing him to suffer from "dyspepsia," made him take an emetic. On the following day he spontaneously vomited twice, the general state remaining as above-mentioned.

Bowels open and water passed freely. I was requested to see the patient at seven o'clock, P. M.

Present state.—Slight clonic convulsions of the muscles of the face and superior extremities; forty breathings in a minute, pretty regular; pulse contracted, 140; pupils somewhat dilated, react on the influence of sudden light, but are floating for a while afterward and dilate again; conjunctiva scleroticæ slightly injected with blood; occiput abnormally warm; hands and feet of normal temperature. The child in general was well developed, the head somewhat large; six teeth cut some months ago; the gum is swollen. The *sutures and the large fontanel perfectly closed*, and have been so, as far as I could learn from the very intelligent relatives, for at least three months.

Diagnosis.—Cerebral sclerosis from mechanical compression of the brain, caused by premature closure of the cranial junctures, increased by cerebral hyperæmia consequent on dentition.

Prognosis.—Probably fatal; the patient may recover from this attack, but only to die by a future one, or at best will become idiotic.

Treatment.—Calom., jalap. aa. gr. j., to be taken every hour; head to be kept under ice.

The convulsive attack lasted for three hours, the muscles of the inferior extremities becoming also affected; there was only one short intermission after copious vomiting. Patient vomited once more at eleven o'clock, P. M. At midnight, fifty-two breathings in a minute, somewhat irregular; pulse as before, 172. Temperature of the occiput even higher than before; conjunctiva scleroticæ more injected. The child no longer fully unconscious.

Nov. 3d, 8½ o'clock, A. M.—Pulse contracted, somewhat irregular, 144; fifty breathings, interrupted by sighing. The child is prostrate, spiritless, with an expression of pain in corrugation between the eyebrows. The right eye more injected than the left one; no more convulsions; bowels have been open three times; water has been passed several times. Patient vomited once, not long after midnight; has taken the breast four times, and is constantly looking around for water.

Four o'clock, P. M.—Took the breast and drank several times; vomited four times; left hand is constantly kept on the parietal bone; pulse as before, 144; respiration sometimes sighing, thirty-eight; eyes hollow, considerably injected with blood; occiput abnormally warm; feet cool, hands cold.

Treatment the same. Hot poultices of mustard and linseed on feet and legs.

Ten o'clock, P.M.—Vomited twice, each time after drinking; took the breast several times; had no convulsions, but shook his limbs under the bed-clothes, from time to time, as if from impatience. Respiration, as above, 35; pulse, 130, somewhat irregular; body warm all over, with the exception of the nose, which was cool. Feels every slight touch; screams abruptly and violently when his eyes are forced open. During sleep, the eyelids half opened; pupils small. After being awakened from his heavy sleep, his pupils are a little dilated; contract by the action of light, but afterwards float, and dilate again.

Treatment.—Calom. gr. j., extr. hyosc. gr. ⅛ every hour. Ice continued.

Nov. 4th, half-past eight o'clock, A.M.—Pulse and respiration as yesterday; 144; 54. No change at all, with the exception of the patient's vomiting no longer; he is alternately either awake and conscious, or in a kind of heavy sleep; had two evacuations of the bowels, passed water freely. Feet cool.

Six o'clock, P.M.—No change; no convulsions; no vomiting.

Nitr. Sod. ʒij. extr. hyosc. gr. iiss. inf. digit. (e gr. xij.) ℥iij. a teaspoonful to be taken every two hours. Ungt. hydrarg. for external use.

The flexions and extensions of the right superior extremity kept on and increased, the child grew more restless, threw his head from one side to the other, respired more frequently and more irregularly. Nevertheless, about one o'clock, A.M., he took the breast, but only for a minute. The increased irritation was soon followed by unconsciousness and sopor, which lasted for about an hour. With the usual symptoms, œdematous rhonchi, etc., death ensued at half-past two o'clock, A.M., November 6.

Post-mortem examination, four o'clock, P.M., thirteen and a half hours after death. Front side of the corpse pale, back side red and brown, by hypostasis; conjunctiva scleroticæ not injected with blood. Galea aponeurotica pale throughout, except on the occiput, where it is suffused with blood, more so than could be explained by hypostasis alone. All the integuments being removed, about *fifteen white and unusually dense insular spots*, of a diameter of from a twelfth to three quarters of an inch, become visible on the frontal and parietal bones. Cranium not abnormally thick; occipital bone even rather thin; besides, it is hyperæmic, and shows on its inside *digitated impressions* of such an extent as are met with only in adults. The insular spots, being *the places of increased local ossification*, are just as manifest inside as outside. Of *the frontal suture there is no sign.* Between the frontal and the parietal bones, there is no interval, the *large fontanel having* *totally disappeared.* Where the large fontanel ought to be, the coronal and sagittal sutures are not wholly ossified, but they cannot be disjointed by any means. Ossification is perfect everywhere else.

The dura mater *cannot be torn from the cranium;* the membrane is of such a thickness and adheres so firmly to the cranium, that it has to be separated from the bone by means of the scalpel. The sinuses are full of blood; so are all the bloodvessels of the pia mater, particularly on the cerebellum; nowhere extravasated blood or any pathologico-anatomical alteration, such as tubercles, exudations, etc.

The *brain large*, *heavy*, *solid*, proportionally developed in its several parts; *gyri* numerous and *solid*, some of them evidently *flat*, particularly so on the superior surface of the hemispheres. The grey substance is less hard than the white, but nevertheless is tough and elastic. This is found to be throughout the condition of the cerebral substance. When it is laid open by long incisions, no blood is seen, except when compressed. *Ventricles narrow*, contain no serum. The *pons Varolii* and *medulla oblongata* are *most solid* and dense; they are difficult to cut. The cerebral substance, after having been outside the cranium and handled and turned for at least an hour, remains pretty hard and solid.

Although the diagnosis, in the foregoing case, was clear and fully proved correct by the post-mortem examination, there are some interesting facts apparently contradictory. After the first attack of convulsions, no other occurred for three days, almost up to the hour of death; constipation and anuria, so common in cerebral diseases, were also absent.

Between my last case and the one of Prof. Mauthner, there is one important similarity. The thickness and firm adhesion of the dura mater along the sutures and in the region of the large fontanel, in both cases, seem to prove, that *a chronic congestive or inflammatory process* was both the cause of the pathological alteration of the membrane itself, and of the abnormal deposition of phosphates and carbonates in the flat cranial bones. No such alteration of the membrane was found in my former post-mortem examinations. This difference is strikingly confirmed by the condition of the bloodvessels. In some cases, they *were filled with blood, in other ones the membranes were pale and bloodless.*

In looking over the series of cases and observations referred to, another highly interesting fact will strike us. I have reported the case of a child whose brother died at the same age, with the same symptoms, the fontanel being closed and the sutures perfect. Baillarger, too, reports the cases of three microcephalic idiots in one family. Nothing of the kind, however, occurred in my last case; the boy had sisters—the oldest one nine, the youngest one three years old—the heads of all of whom are well developed, and even large. The youngest girl is reported to have been remarkable for the pulsations of the arteries being for a long period visible through the integuments of the large fontanel. Therefore, *in some cases of premature closure of the fontanel and the cranial junctures, an hereditary or family influence seems to be absent, while in other ones it cannot be denied.*

Since the preceding pages were written, I have had occasion to assist at the post-mortem examination of a man, thirty-six years old, who died from *sclerosis cerebri.* The facts resulting from this examination, my friend, Dr. Kammerer, who attended the deceased for some years past, kindly allowed me to publish. I feel bound to do so, because this case is most apt to illustrate the subject of this essay, and because, as one of our best authorities on diseases of the brain, Prof. Leubuscher, asserts that cases of genuine sclerosis cerebri are exceedingly rare. The short, but complete history of the case, as communicated to me by Dr. Kammerer, is as follows:

Case.—Deceased, a tailor, is said to have been always healthy. Only two years ago, his countenance began to show a cachectic color; in the epigastric region, a frequent soreness was complained of, which used to be complicated with or followed by vomiting, and the patient grew morose, taciturn, peevish. About the same time, or shortly after, a creeping pain was felt, sometimes in the hands and fingers, sometimes in the feet and toes, which changed very often, and used to alternate, as to its seat, and thereby induced the patient to consider it as rheumatic. His physician, however, was soon led to attribute these symptoms in the peripheric nerves to a cerebral origin, especially when slight and occasional signs of paresis became visible. Four or five months ago, the patient had an attack of syncope, total loss of the mental, sensory, and motory functions coming on suddenly. After this attack, he was sick for about five or six weeks, the main symptoms being a small and feverish pulse, and all the cerebral symptoms of typhoid fever, but no typhous alterations at all in the abdominal organs, and no trace of critical secretions. He never felt well afterwards; nearly every week, an attack of sudden syncope occurred, similar to the one mentioned above, after which the patient used to feel as usual. But the paretic symptoms in the extremities increased, the interval between the attacks grew shorter, and they were preceded by a violent headache, especially in the occiput. In the last weeks preceding death the attacks occurred almost daily, even sometimes every day, and they were preceded by the most intolerable headache, which forced the patient to the most heartrending outcries, and was mitigated by nothing except a close and hard pressure on all sides of the head at once: they were followed by copious sweats. In the last week of life, the patient was scarcely able to lie down; if he did, he was sure to feel worse; and he walked about his room all night. There were from eight to twelve attacks every day, of the same kind, as described above, the sweat being followed by a vehement shaking and chilliness. In one of these attacks the patient died.

Post-mortem examination, Dec. 9th, seventeen hours after death.—Galea aponeurotica pale, bloodless; cranium dense, particularly so the frontal and parietal bones. Both of them are very concave, extending very far, the one forwards, the other backwards. The region of the large fontanel, where the coronal and sagittal sutures meet, depressed; the sutures are visible only at this meeting point; everywhere else they have entirely disappeared. The form of the cranium narrow and long (dolichocephalus, Virchow), diploë very much developed, *impressiones digitatæ* very deep and large, particularly so on the inside of the os frontis and the lower part of the os occipitis. The cranial impressions of the sinus, sulci venosi, uncommonly deep. Foramina emissaria are not found at all. The margins of the impressiones digitatæ, the juga cerebralia, uncommonly sharp pointed, particularly so on the basis cranii. Sella turcica of an extraordinary size and with sharp margins. The whole inside of the cranium and the dura mater bloodless, less so the arachnoidea, without being, however, hyperæmic. The brain stiff, tough, hard; gyri hard, extremely flat all over the cerebral surface; the inner and upper edge of both hemispheres very sharp, their inner surface very flat and hard. The grey and white substances contain very little blood. The white substance looks discolored, showing a dirty greyish tint. Thin slices cut from the hemispheres are tough, may be suspended by one end without breaking or even lengthening. The lateral ventricles very narrow, without any serum; the third and fourth ventricles normal but narrow. The brain throughout of the same density and toughness as its surface; pons Varolii and medulla oblongata even more so. No disproportion, as to size, between the grey and white substances.

This is, undoubtedly, an evident and very instructing case of *sclerosis cerebri*. The history of the deceased's cranium and cerebrum, as may be concluded from the results of this post-mortem examination, is briefly this: The abnormal state of the cranium has been the first false step in the general development, the large fontanel and the cranial junctures closing too early. This is proved to be a fact by the upper frontal and parietal region, by the adjustment which has evidently taken place in the frontal and occipital directions, and by the dolichocephalic shape of the cranium. From this time, that is from the third or fourth quarter of the first year of life, dates the disproportion between skull and brain. It is probable that the deceased, when a child, was so fortunate as to escape difficult dentition, and severe symptoms of irritation produced thereby; if he had not been so, there is a great probability that he would have died in early childhood. Deceased is said to have been intelligent when attending school. This is not uncommon in cases where the above-mentioned disproportion advances slowly and has not been complicated with irritative symptoms. As long as life continued there was a constant antagonism between cranium and cerebrum. It is not improbable also, that in the last years of life renewed depositions of calcareous matter have taken place, more so, probably, on the basis, than on any other part of the cranium. The frequent attacks to which the patient was subjected, exhausted, at length, the power of resistance, which is limited as well in the nervous, as in every other system of the organism.

Real hypertrophy of the cerebral substance is out of question. I have remarked in another place, that cerebral hypertrophy affects but the white substance, not the grey, and the large hemispheres only, not the cerebellum, and cannot but produce a disproportion between the two. No such disproportion exists in our case. Besides, the shape of the cranium and the other facts alluded to are against such an assumption.

After the foregoing exposition, it appears that the prognosis of the kind of cerebral sclerosis described is highly unfavorable. According to the present symptoms in each case, whether a distinct and perfect diagnosis be made or not, either a stimulant or an antiphlogistic treatment will seem to be indicated. The former will aggravate the condition of the patient in every case, which is combined with congestion of the brain or its membranes, while theoretically it should be adopted only where the main symptoms are those of perfect depression. The debilitating course of treatment may be able, at once with the diminution of the dimensions of the body in general, to remove, for a while, the disproportion between the brain and the cranium. Taken theoretically, all this is right and promising of success. But we cannot continue to debilitate without killing the patient by exhaustion or by meningeal exudation, which so very frequently is the result of general and continued inanition.

Finally, I wish to state emphatically, that I do not assert that every child whose fontanel is ossified prematurely, must and will fall sick and perish with cerebral symptoms at an early age. For the premature ossification of the fontanel and sutures need not, of itself, absolutely and always produce congestion of the brain or its membranes, which often becomes the occasional and last cause of death. But what I assert and wish to be understood to say is this, that every child, whose fontanel and cranial junctures have been prematurely closed, and who falls sick with symptoms of cerebral irritation or depression, *is predestined to certain death* at an early age. I therein fully agree with Condie,* who has only a few, but striking, words on this subject, that "when the growth of the cranium ceases, while that of the brain continues, the morbid phenomena resulting from the compression of the brain, which invariably results, may certainly be, to a certain extent, abated, the comfort of the patient increased, and life prolonged by a proper hygienic course of treatment—but all hopes of effecting a cure must be abandoned."

In giving, therefore, the preceding exposition, I was well aware that I should be unable to advance in the least therapeutics; my only desire was to call the attention of the medical practitioner to a subject of the highest etiological, diagnostic and prognostic interest.

ART. V.—*The Ioduretted Saline Waters at St. Catharines*, C. W. By THEOPHILUS MACK, M.D.

NEAR the debouchment of the Welland Canal into Lake Ontario, and upon the right bank of a rivulet called formerly "The Twelve Mile Creek," but now forming the bed of this portion of the canal, a country town, named "St. Catherines," has been built in Western Canada. It is situated most conveniently for visitors, being upon the line of the Great Western Railway, about ten miles from the Niagara River Suspension Bridge, and twelve miles from the Falls of Niagara; it is also in direct communication with Toronto, the capital of Canada, per steamboat, and a four mile railway, which accomplish the transit in about three hours.

The town contains about 7,000 inhabitants, and is most picturesque in its position, being flanked by the chain of heights which run continuous with the ridge from Lockport, N. Y., springing from the bank of the Niagara at the cataract, and Queenston on this side, and running around the head of Lake Ontario to lose themselves far in the interior. In the neighborhood of St. Catherines, they form one side of an amphitheatre, covered with trees and cultivated fields, presenting much scenic beauty. These heights are supposed to mark the coast of a former vast inland sea, and the valley intervening between them and the lake shore is remarkably fruitful, and presents a pleasing and animated picture to the eye of the tourist. The air is pure and soft, the health of the inhabitants above the average of the denizens of western New York and Canada, the country above the highlands abounding in ever varying scenery of hill and dale, in many places full of romantic beauty, while the mouth of the Twelve Mile Creek widens gradually into a small loch, studded with islets, and rivalling in charms one of the prettiest of the far-famed Killarney Lakes.

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* F. D. CONDIE: *A Practical Treatise on the Diseases of Children.* Fourth ed., 1854, p. 388.

This easiness of access, mildness and salubrity of climate, pleasing nature of the environs, and undoubted efficacy of the waters in alleviating and removing a vast number of the diseases of a chronic character, to the treatment of which they have been applied, render the Spa at this spot an object of especial interest to the profession; more particularly from the fact that an annually increasing number of visitors and invalids resort hither during the summer months to bathe in and drink the waters, as well as to enjoy the calm country scene and air which tend so much to the convalescence of the citizen.

The *salt-lick*, where the artesian boring has been effected for the well, had long enjoyed a high reputation among the earlier settlers, and as usual a wide range of application (and its being so long resorted to shows that occasionally it must have proved successful), when a company was formed to manufacture salt from the well, which for that purpose was sunk to the depth of about six hundred feet; this speculation did not pay, from the deliquescent nature of the salt, owing to the large proportion of chloride of calcium, which a reference to the accompanying analysis will show to be very great, much to the mystification of the worthy gentlemen engaged in the enterprise, who could not comprehend the reason that a water so intensely saline to the taste, should yield so small a percentage of the chloride for which they sought. The manufacture was abandoned, and the property having changed hands, a rude bathing establishment was opened, and the mother water being boiled down and bottled, was sold far and wide as a panacea.

About five years ago the present proprietor purchased the grounds and well, and immediately commenced fitting up a bathing-house, and the erection of a splendid hotel, which were first thrown open to the public in the summer of 1855. The success has so far been very flattering, and the effects of the water being under my own observation, I am enabled to place before my professional confrères the following facts relative to its action and use.

Before doing so, I will take the liberty of submitting the following analysis, the first qualitative effected by myself, the second quantitative, from the able hands of Professor Croft, of the Toronto University.

Qualitative Analysis.—Taste intensely saline, giving the smell of sea-water. Neutral to test paper. Sp. gr. 1036. Temp. 60° ; temp. of air 67° Fahr.

Results of Analysis.

Chloride of Sodium.
" Calcium.
" Magnesium.
Sulphate of Lime.
" Soda.
Iodide of Magnesium.
Bromide of Magnesium.
Carbonic Acid.
Iron Protoxide.
Alumina.
Silica.
Organic Matter.

Quantitative Analysis, by Prof. Henry Croft.

	In 1,000.	In pint, 7,680 grs.
Sulphate of Lime,	2.1923	16.8368
Chloride of Calcium,	14.8544	114.0818
" Magnesium,	3.3977	26.0944
Iodide of Magnesium,	0.0042	0.0322
Bromide of Magnesium, a trace.		
Chloride of Potassium,	0.3555	2.7302
" Sodium,	29.8034	228.8901
" Ammonium, Silicic Acid, } a trace.		
	50.6075	388.6655
Loss,	1.0670	
Toronto, July 25, 1853.	51.6745	

Prof. Chilton of New York announced the following as his analysis of the mother water, or bittern, after crystallization of the salt.

Sp. gr. at 60° Fahr. Quantity examined, one pint.

	Grains.
Cloride of Calcium,	2,950.40
" Magnesium,	1,289.76
" Sodium,	781.36
Proto-Chloride of Iron,	13.76
Sulphate of Lime,	16.32
Carb. of Lime and Magnesia,	2.08
Bromide of Magnesium,	2.01
Iodide of Magnesium,	2.11
Silica and Alumina,	2.47
Total grs.	5,060.27

The waters are by no means identical with sea-water, as the analysis will show at once; a resemblance to the waters of the "Dead Sea," as reported by Lieut. Lynch, may be traced, but in taste, appearance, and physiological effects they differ very widely from the waters of any ocean. An examination into the nature of saline constituents as given in the foregoing lists, will at once lead us to expect that a very marked action upon the animal economy must be the result of their prolonged use, and that such is the fact, I think I am now in a position to prove.

It is scarcely possible at the present day to discredit or doubt the influence of mineral waters upon the human system. In general readily absorbed and conveyed by the circulation to every viscus or structure, they must exercise a very manifest influence upon the functions of every organ and tissue, and a salutary effect in a great variety of disorders, and as our every-day experience teaches us that solutions of medicinal substances effected by the cunning hand of nature produce actions upon the organism which we in vain attempt to produce by the same agents combined by the art of the chemist, the vast majority of the medical world daily recommend to their patients the use of some of the mineral springs, now everywhere seeking a modicum of public patronage.

If chemical analysis had not declared the composition of the "St. Catherine's Well," and were the effects of bromine and iodine, not yet fully established, the recorded results of experience in the use of this kind of water from the study of German Spas, during more than half a century, almost identical in nature, have been sufficiently conclusive to silence discussion as to their therapeutic value. This field of observation, constituting a mass of clinical experience utterly impossible to derive from the use of any other therapeutic agents, has demonstrated that Spas of this character generally operate a change in the state of the stomach when this organ is suffering from want of tone, and from many neuropathic. They produce a resolvent action in engorgements or hypertrophies, or a tonic action in many cases of excessive secretion from mucous surfaces. In strumous affections the improvement from this class of waters is prompt and *prononcé*, neuralgiæ, and maladies usually termed asthenic, are generally improved while the anæmia of chlorosis is quickly removed, giving early indications in the lips and cheeks of such patients, of a more perfect pneumatosis. The saline nature of the Salins, in the eastern portion of the Jura of France, bordering on the Swiss frontiers, as analyzed by Mr. Desfosses, are found to be composed of a very similar assemblage of ingredients, viz. the chlorides and bromides, and are confidently extolled by M. Carrière for their beneficial effects in the lymphatic diathesis, in chloro-anæmia, in gastralgia, enteralgia, muscular asthenia, chronic rheumatism, general paralysis, rickets, tumors, ulcerations, and caries of a scrofulous nature, white swelling, skin diseases, and "vice syphilitique." At this place as at St. Catherines, the salt has been separated, and the concentrated water administered with great success.

The Kreuznach mother water is very similar in composition and remarkably alike in medicinal effects. Professor Osann's analysis, shows sixteen ounces of the *original* water to contain the following mineral constituents, and the remarkable resemblance to the water of the artesian well at this place is quite striking:

Chloride of Sodium,	72,922
" Potassium,	0,971
" Lithium,	0,075
" Calcium,	13,276
" Magnesium,	0,251
Bromide of Sodium,	0,307
Iodide of Sodium	0,003
Carbonate of Magnesia,	1,351
" Baryta,	0,299
" Strontia,	0,683
" Iron,	0,199
" Manganese,	0,009
Alumina,	0,021
Silica,	0,313

This is as near an approximation to identity as the geological formation of the two regions can allow. Sixteen ounces of the mother ley of Kreuznach contained 2,625.75 grains of solid matter distributed in the following manner:

Chloride of Calcium,	1,577.71
Bromide of Calcium,	388.72
" Potassium,	92.82
Chloride of Magnesium,	38.44
Bromide of Sodium,	154.10
Chloride of Sodium,	60.34
" Potassium,	17.30
Alumina and suboxide of Iron,	35.66
Crenic and apocrenic acid and two peculiar resinous matters with traces of iodine,	216.16
Water of Crystallization and loss,	44.50
	2,625.75

The waters here have a large quantity of the iodides, and I have reason to believe that the bromides are estimated too low in Dr. Chilton's analysis.

The efficacy of the water, and especially the mother waters of Kreuznach, in uterine tumors and hypertrophies seems to be very generally recognized.

First among the affections benefited by the use of the saline waters of St. Catherines, I will place rheumatism, in its chronic form and in the stage of convalescence from the acute form of that disease. During the past and present bathing season, more than two hundred cases of chronic rheumatism in its protean forms have presented themselves here for relief, and I can aver that out of that number, at least one hundred and eighty went away cured or highly gratified with the improvement consequent upon their sojourn.

Gout, in all its stages, is the next in the category of human ills to which the internal uses of the mother water, together with the external use of the natural water, seemed to be most happily adapted. To my knowledge, about sixteen invalids of this description have visited the Spas, and with one solitary exception have been improved. Scrofulous ulcerations, affections of the joints and lymphatics have all been relieved; non-malignant hypertrophies, or indurations, are rapidly softened and removed; among these, enlargements of the uterine neck, ovaries and mammæ are decidedly altered, and absorption promoted; great alleviation is always experienced in the dorsal, perineal, and ovarian pains, so constantly attendant upon uterine disease, and simple leucorrhœa is frequently cured by a few baths. In hepatic torpor the water acts well, and as I believe very few mineral waters in America equal it in its diuretic action; it is invariably of use in lithiasis. In oxaluria the hot bath in conjunction with mineral acids ranks high among remedies. In psoriasis, when the eruption is not active, the baths appear beneficial. In certain forms of indigestion the chloride of calcium acts extremely well, and in some cases of obstinate constipation, the free internal use of the water and the hot bath have proved completely successful.*

I have written these few crude observations *currente calamo*, and I trust they will meet the end for which I stated at first I wrote this article for this Journal, viz., to keep the profession *au courant* as to the cases likely to derive benefit from a visit to St. Catherines.

ART. VI.—*Report of the Proceedings of the Medical Societies of New York.*

NEW YORK ACADEMY OF MEDICINE.

REGULAR MEETING, DEC. 2, 1857, DR. MOTT, *President.*

PUERPERAL FEVER.

(*Continued from page* 163, vol. iii. 3*d Series.*)

DR. A. CLARK said:—That as much time had elapsed since he was first honored with the attention of the Academy on this subject, he would take the liberty of recapitulating the positions he had taken in regard to the nature of puerperal fever. He had expressed his concurrence in the views of those who believe the disease to be contagious, and had spent a little time in considering the different doctrines relating to the means by which the contagion is conveyed from one person to another. He had stated that in his belief the disease is composed of two elements, a fever and an inflammation. In this respect, it resembles the epidemic dysentery, the epidemic erysipelas, or small pox. He had already stated that in the epidemic erysipelas which prevailed in New England, and in the western States, from seventeen to ten years ago, these two elements were as clearly distinct, in the time of their development, as they are in small pox. A febrile movement, lasting a variable time, attended by swelling of tonsils, and of the superficial and deep-seated glands of the neck, preceded the grave inflammatory lesion; and when this latter made its appearance, one, two, or three days after the fever commenced, it was an erysipelas of the head and face, of the lower extremities, the body, side, or arm ; or it was a pleurisy without any external inflammation, or a peritonitis, or indeed, almost any internal inflammation. In lying-in women, and those in the puerperal state, it assumed the form of puerperal fever. In these various modes of development, it seemed as if the same poison was demonstrating its morbific power by lighting up a fever first, and kindling an inflammation afterwards, the double effect of one agent. He had expressed his belief that the fever of the puerperal disease was just as certainly followed by inflammation, as the fever of small pox is followed by an eruption, complete or incomplete; and as the fever of small pox never endangers life till the eruption, or some modification of it occurs, so he believed the puerperal disease is never fatal, but by the aid of its inflammatory element. These comparisons, however, illustrate nothing more than the compound nature of this fever, the succession in the two leading elements follows a very different law; for while small pox fever requires two days to reach its eruptive stage, and epidemic erysipelas one to three days to reach its inflammation, the puerperal fever, like epidemic dysentery is followed promptly by its local lesion, commonly in a few hours, often in one. He believed in the communicable character of the disease, and this independent of other reasons would almost compel him to believe in its febrile nature. He believed in the inflammatory lesions, because their constancy is testified to by every accredited observer, except in a few rare instances.

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* Several cases of chronic dysentery and diarrhœa have derived advantageous results ; in one case of supposed ulceration of colon this bath effected a cure. In malarious toxæmia the waters are of excellent effect.

These rare instances were the cases, which, in the belief of Simpson, Gooch, and others, were without lesion of any kind—a simple fever, the poison of which overwhelmed the vital powers. It was his object, on a former occasion, to show that these cases were no exceptions to the general rule, but that they were really marked by inflammation, like the others, but that the inflammation was one that had escaped detection, that it was an endometritis, and that the inflammation affecting the inner surface of the uterus, involved the open or valvular mouths of the uterine veins, and might produce purulent contamination of the system while no pus was found in the veins themselves after death. The evidence of this was in the inflammatory exudation on the inside surface of the uterus; the redness of the uterine structure, penetrating a minute distance from within outward; the symptoms of pyæmia, and the discovery of pus in distant organs. To present this idea was the chief object of his former remarks; and to give it distinctness, he had referred to and recognized the then commonly described inflammatory lesions, viz. the peritonitis, the purulent phlebitis in the uterine sinuses, and the purulent inflammation of the uterine lymphatics. These, together with endometritis he had stated were the primary *inflammatory* lesions, and that there were other organs subject to inflammations, in a subordinate and secondary degree.*

These were some of the views that he had presented at a former meeting, and he recapitulated them now to correct any erroneous impressions which might be formed from the condensed report of his remarks published in the medical Journals.

He could hardly open this subject for the further exposition of his views, without first noticing some of the statements made by Dr. Barker when the topic was last entertained by the Academy.

Dr. Barker urged that puerperal fever is a zymotic disease. So perhaps it may be, but Dr. Clark did not like the term, and was not in the habit of using it, because it is vague and of uncertain import. As commonly applied, it means, he said, all endemic, epidemic, and contagious diseases; and in this latitude of usage it had been made to embrace the most dissimilar affections. He had looked into the annual report of mortality in this city for the year 1842, prepared by our learned and industrious fellow-laborer, Dr. Griscom, much the best report that has ever issued from our City Inspector's office, and he finds there that the diseases usually called zymotic, are the miasmatic, typhus, and typhoïd fevers; erysipelas, small pox, scarlet fever, and measles, thrush, cholera infantum, croup, dysentery, diarrhœa, hooping cough, influenza, and syphilis. He finds that our Boston friends, in preparing the valuable mortuary reports of Massachusetts, use the term, and spread it over precisely the same ground; while puerperal fever is carried far off into another section, and appears among the diseases of the organs of generation. This he discovers is the general usage of those who are attached to the word. By this very breadth of meaning, the term becomes vague and uncertain, and therefore objectionable. Should there be a disposition to use it in a stricter and narrower sense, as applicable to those diseases which reproduce the poison which causes them—in other words, strictly contagious diseases—in respect to the old idea that these diseases implied a fermentive process within the system, there would probably be less objection to the term, though even then it should be admitted into the medical language as a figure of speech, and in deference to the fathers. If the term as used by the gentleman means simply a contagious disease, Dr. Clark was ready to subscribe to his opinion, but for the sake of precision he was compelled to prefer the words, contagious and communicable, to zymotic.

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* In making this classification of the inflammations, Dr. Clark did not mean to say that they were the earliest evidence of the morbid impression made upon the system; he meant to state simply, that among the inflammatory changes, those in the peritoneum and uterus were first in time and importance.

Dr. Barker had taken the occasion, he said, to speak somewhat disparagingly of the study of pathological anatomy, as if it limited our view of disease, and taught us to disregard its general history. To this Dr. Clark would reply, by pointing to what pathological anatomy had done, and the rank which pathological anatomists hold in our profession. Nobody could doubt that the immense improvements in medical diagnosis and practice, which distinguished the present century from all that had gone before it, the discovery of new diseases, and the advantageous changes in the treatment of affections long known, were to be set down to the account of this branch of study, more than to that of all others put together. New York physicians had gained the reputation of excelling their brethren in most other cities in the art of diagnosis. If they deserved this reputation, it could be attributed to nothing so much as to the general cultivation of pathological anatomy, and to the reflection which that study suggests. The Pathological Society, with its profusion of means, and by its calm deliberations, and its constant reasonings from morbid appearances in the dead to symptoms in the living, was a constantly recurring lesson to teach the profession not only what this study is worth, but to inform them what phenomena in life are not illustrated by the revelations of the scalpel, and also to keep alive a love for this pursuit by a demonstration of its advantages. In this respect it is far the most useful of our public societies, and who will venture to say that it has narrowed our view of diseased action, or turned us away from the proper consideration of the morbid agencies which work unseen, but fatally, leaving few intelligible footprints ?

Morbid anatomy contemplates what it cannot demonstrate to the eye, no less than the obvious changes of structure.

If we look through the catalogue of distinguished names that grace our profession in the present age, we shall find that with scarcely a single exception they are the names of pathological anatomists, and that the foundation of their distinction is laid on this study. Brodie, and Velpeau, and Nelaton, Andral, Chomel, Louis and Trousseau, had been nothing if their intelligence and zeal had not induced them to follow their fatal cases to the dead-house ; and certainly it will not be said that these men have contracted their perceptions, and have been led to disregard any recognizable morbid agency by these pursuits. On the contrary, any just study of men must compel us to the conclusion that the same zeal which urges to the laborious use of the scalpel, is the parent equally of that industry which gives the largest and widest views of disease in all its relations.

But we are told that an appeal to the *post mortem* appearances can hardly be allowed, because the observer is likely to come with his mind preoccupied with the idea that he must find some change of structure to show for every disease. This at least seems a fair construction of the objection taken, that "pathological anatomy has led to exclusive solidism in medical doctrines." Is this really so ? The present century illustrates the influence of pathological anatomy on professional opinions. Post mortem examinations were rarely obtained, or even asked for, till the time of the French revolution. Fifty years ago the doctrines of Cullen, or rather a solidism more exclusive than his, possessed the whole medical mind. Humoralism could hardly be said to have had an advocate. Even as late as 1830, Cullen reigned. In 1835 he (Dr. Clark) was born into the profession, a solidist. Almost all the senior and middle aged men, who now complimented him with their attention, were baptized into the same faith. And where are the exclusive solidists to-day ? The very phrase is obsolete, or if not, is known only to mark a period in the history of medicine. Every man's opinion has undergone a change ; and pathological anatomy has effected this change. Aided by chemistry and the microscope, it has shown us, both by its positive and its negative results, that there are diseased actions which leave no marks in the solids, or only such are secondary and subordinate. When every physician, at all familiar with post mortem examinations, has found many of the solidist opinions in which he was educated gradually melting away ; when such men as Carswell, Andral, and Cruvelhier,* take the lead in investigations which show the blood to be the seat of the gravest changes, and so far as we can see primary changes, there is little ground for suspecting pathological anatomy of exclusive solidism.

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* Cruveilhier (*Anat. Path.* Liv. xi. p. 3) discussing this very point, viz., how purulent contamination affects the system, says, "The solidism of the school of Pinel was mute before such facts;" and adds, that the "*sympathy*" of Bichat was "a metaphor, a felicitous word, which took the place of a fact."

But these are, after all, little more than side issues. The statement of gravest significance, and if it be supported, one which closes the argument on the real question at issue, is that the "lesions are often not sufficient to influence the progress of the disease, or to explain the cause of death." This statement, unsupported as it is by facts, is nothing more nor less than begging the question. The opinion which follows in support of this assertion, that "the most malignant form of this disease, that which proves fatal in a few hours, offers the *fewest and least striking* structural lesions," may be true enough; for intense pyæmia requires little aid to destroy life, and certainly it is not the most striking among the manifestations of morbid anatomy. Two questions are suggested by these statements: 1st—What is really the shortest time in which the most malignant form of puerperal fever destroys life; and, 2d—Whether this shortest time is not long enough for endometritis to produce fatal contamination of the blood? or, in other words, in what time purulent infection can overwhelm the vital forces?

Dr. Clark had not, as he said, made any extended research to ascertain the shortest duration of puerperal fever. He had only looked over his own cases, and those reported by the late Dr. Vaché. These latter are cases which occurred in Bellevue Hospital in 1840, when the form of the disease was the most malignant, and the fatality among those attacked greater, than in any other visitation of the fever, since the lying-in-wards were opened. The shortest case of which he had any notes was fatal in 30 hours. The six shortest of Dr. Vaché's cases lived 33, 36, 42, 44, 44, and 48 hours respectively, and the lesions noted in these several cases were as follows:

Case. 5.—Duration, 33 hours. All the peritoneum injected, that of the small intestines highly so; mucous lining of the small intestines much softened and inflamed, a portion of that of the stomach inflamed; a pint of straw-colored serum in peritoneal cavity; interior of uterus appeared natural.

Case. 8.—Duration, 36 hours. Peritoneum decidedly injected, containing a pint of dirty, cream-colored, puriform fluid, with shreds of lymph; mucous membrane of stomach and intestines considerably inflamed; *the inner surface of uterus covered with a shreddy secretion of the color of gangrenous tissue, and apparently saturated with pus.*

Case 19.—Duration, 42 hours. Peritoneum somewhat injected, containing a quantity of reddish brown fluid, but no lymph; half an ounce of pus between the uterus and bladder; uterus lined with a *dark chocolate-colored stringy secretion*, which being scraped off, left *the inner surface somewhat injected.*

Case. 12.—Duration, 44 hours. Some lymph on the peritoneum, half a pint of brown serum containing lymph flocculi, in its cavity; inner surface of uterus covered by *a fœtid stringy matter, intermingled here and there with a grey, ash-colored deposit.*

Case 1.—Duration, 44 hours. Peritoneum injected, a pint of sero-purulent fluid in its cavity, considerable lymph on its surface ; inner surface of uterus covered by *a light red secretion, with an occasional black patch.*

Case 13.—Duration, 48 hours. Lymph on several portions of the peritoneum ; a little pure serum in its cavity ; right ovary large and contained some small abscesses ; inner surface of uterus lined with *a pink-colored matter* of the appearance of healthy lochial discharge ; broad ligaments of right side thickened and puffed out by deposition of lymph.

It is proper to state here that Dr. Clark saw all the cases reported by Dr. Vaché as they occurred after the 23d of February, up to the time the lying-in-women were sent to the island; and at Dr. Vaché's request he took charge of such patients as were left in the infected wards, when new wards were opened. He also witnessed and recorded all the post-mortem examinations which were made at Bellevue after the above date. Case 4, and all from 6 to 18 he saw, and it was from his notes of the lesions that Dr. Vaché's reports were partly made up. When case 5 in the above list was examined, particular attention had not been paid to the inner surface of the uterus, and the report that this surface "appeared natural" cannot be taken as conclusive, especially since Dr. Vaché himself, as a rule, did not witness the dissection, for prudential reasons. It was case 8, in which the uterus presented an appearance altogether like that figured by Cruveilhier, Liv. iv. pl vi. fig. 2, that drew attention strongly to this surface, and it was carefully studied in all the cases which occurred afterwards.

Dr. Clark holds that "the light-red secretion" of case 1, the green shreddy gangrenous looking effusion of case 8, the "fœtid stringy matter" of case 12, the "chocolate-colored stringy secretion" of case 19, and the "pink-colored matter" of case 13, all indicate a morbid state of the inner surface of the uterus, and that all these "matters" and "secretions" are the fibrinous or purulent products of inflammation, colored variously by the blood in the uterus. The natural appearance of this uterine surface for some days after delivery, is in his conviction that which is given it by adherent blood, coagulated in shreds or small masses, and by the watery secretion which is effused to wash away this blood ; the prevailing color being that of dark, coagulated blood, for at least two or three days.* As to Dr. Vaché's suggestion, that the

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* M. Cruveilhier (*Anat. Path.* Liv. xiii., p. 2) expresses the opinion that purulent effusion is in general a part of the process by which the inner surface of the uterus becomes covered again with its lining membrane. He regards the lochia as a form of pus in most cases, and thinks that non-purulent lochia are the exception. He does not, however, regard the earlier lochia as having this character. It is possible that the analogy of a healing ulcer may have led him astray. With our improved means of determining this point, the lochia should be investigated anew. It has been stated in an earlier part of this discussion, that in the few cases examined of persons dying of puerperal convulsions, and other non-febrile accidents of labor, pus was not found in the uterus, and that in a portion of the cases of actual endometritis the product of the inflammatory action on the free surface is not pus, but lymph. It is possible, then, to say the least, that this distinguished observer

"pink-colored matter," in case 13, was probably healthy lochial discharge, had he seen it himself he would hardly have entertained this idea. Dr. Clark's notes on this case are full, and having been made at the time of the autopsy he thinks they can be relied on. "The inner surface of the uterus was covered by a thin flocculent matter which could be easily removed. This appeared to be lymph colored by a little blood. There were a few shreds of lymph lying unattached in the neck. The odor was not very offensive." "Several vessels of the left ovary contained each, instead of blood, a drop of what appeared to be pus." Purulent contamination in this case, then, may have had a double origin. Dr. Clark adds to these, one

Case.—Duration, 30 hours. Peritoneum injected, most so over the uterus and intestines; about a pint of dirty orange-yellow, sero-purulent matter, containing a few flocculi of lymph in the cavity; inner surface of uterus covered by a dirty pink-colored and yellowish white exudation which appeared to be fibrine.

In all these *short* cases there was evidence of inflammatory lesion of the peritoneum; in all but one there was a morbid exudation on the inner surface of the uterus, and in this one Dr. Clark was informed by those who made the dissection that the inner surface of the organ was not particularly inspected.* There may be cases on record of shorter duration than these. But it is of little importance whether there are, or are not; for it was claimed when these views were first presented, that this internal inflammation except in the most striking

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may have erred. But if a more careful investigation should confirm his views, it would only touch one of the supposed evidences of endometritis, and not the fact of its existence or its relations to the symptoms of puerperal fever. The reparative process, though pyogenic, has no analogies in its *constitutional effects* with the inflammatory; and it appears from Sedillot's experiments that a certain moderate quantity of well-conditioned pus may really enter the circulation and yet produce no sensible effects.

* Cruveilhier, *Anat. Path.*, Liv. viii., pl. i. ii. iii., p. 11, reports a case of puerperal fever (typhus puerperal) which was fatal in fifteen hours after delivery. The peritoneum contained a large quantity of white pus, such as is discharged from a phlegmonous abscess. The lymphatics of the uterus contained pus. There was dark slate-colored softening of the left lung. In this case M. Cruveilhier thinks the peritonitis preceded the delivery, as the woman had had abdominal pains and fever for five days.

On p. 10 he records a case fatal in *twenty-four hours*, the time of the attack being well marked and after delivery. The peritoneal cavity contained serum slightly bloody, and between the uterus and rectum pus. The sub-peritoneal cellular tissue was infiltrated with pus on the colon, along the right ovarian vein, in the broad ligaments (sero-purulent matter), on the neck of the uterus, and part of the bladder, etc. Uterine lymphatics full of pus; left ovary enlarged and softened.

In another case (p. 10) the disease was fatal in *forty-eight hours*; there was flocculent serosity in the peritoneal cavity; pus was infiltrated into the sub-peritoneal cellular tissue of the left iliac fossa; along the left ovarian vein to the kidney; around the neck of the uterus; in the walls of the vagina; and filled the lymphatics of the sides of the uterus

In this series of cases the shortest was fatal in 24 hours. Pus was found in the uterine lymphatics in all, and in all there was peritonitis. The inner surface of the uterus does not appear to have attracted attention.

cases had been overlooked. The appeal to the past, then, cannot be admitted into the argument. Future observations, made in view of the appearances here described, must decide the question, whether there is or is not a puerperal fever without some inflammatory lesion, peritoneal, uterine, or intra-uterine.

Still it will not be a loss of time, perhaps, to inquire a little farther into the probable effects of pus, laudable and ill-conditioned, mingled with the circulating blood. Sedillot, in his valuable treatise on "Purulent Infection or Pyæmia," has fixed the period in which this contamination from ordinary causes will prove fatal, at four to eight days; admitting, at the same time, the *pyoèmiées foudroyantes*, in which a large quantity of pus penetrates the circulation rapidly, as from an abscess opening into vena cava or portal vein, in which death will be determined in a few hours (p. 482). He recognizes, also, a grave condition, indeed incurable poisoning, when pus is mingled with the blood, though the quantity be less considerable, by continual additions (p. 483); and he expressly denies that in the rapidly fatal cases, there is any formation of metastatic abscesses. In nearly all the cases he reports of this accident in man, these abscesses were found after death; but when pus was injected into the veins of dogs, *if the quantity was large*, or if he injected the *serum of ill conditioned* pus, death occurred without such productions. His experiments also show that in the dog, at least, moderate purulent infection may produce no disastrous effects; and that in larger quantity, pus in the circulation does not always produce fatal poisoning.

These experiments are sufficiently instructive, in their bearings on several aspects of this question, to authorize a particular reference to some of them. Thus in

Expts. 1 *and* 2, M. Sedillot injected laudable pus, about 60 grains, the dogs weighing 14 and 16 lbs. troy, and it produced no sensible effect.

Expts. 3 *and* 4.—The same quantity, the dogs of the same size—for a short time yawning; pendiculations, chills, refusal of food; and in one (a little of the pus being from a bubo), alvine evacuations; but in both prompt recovery.

Expts. 5 *and* 6.—Dog weighing 15 lbs., 225 grains of laudable pus; dog 32 lbs., 320 grains. Hurried respiration, thirst, refusal of food, disposed to be alone, lying down and unwilling or unable to rise, after some days extreme emaciation: recovery.

Expt. 7.—Dog 17 lbs., 120 grains of fœtid pus. Animal gravely ill; very feeble; intense chills, panting and difficult respiration. After ten days began to recover.

Expt. 15.—Dog 10½ lbs., 120 grains of pus, greenish and fœtid, from a phegmon in the foot; in ten minutes animal supported himself against the wall, then sank down upon the earth, chills, hurried respiration; cries; *death in one hour.*

Expt. 16.—Dog 17 lbs., 60 grains of pus, from a venereal abscess of the scrotum; feebleness, difficult respiration, chills, horripulations, alvine evacuations, semi-paralysis of the posterior extremities: *death in one hour.*

Expt. 18.—Dog of medium size, 375 grains of well-conditioned pus; extremely feeble; stupid; when urged to walk, staggering, and falling frequently; frequent respiration; violent chills; alvine evacuations; tongue pendent; eye brilliant; later, respiration slow; then difficult, then raleuse; *death in four hours.*

Expt. 20.—Dog 27 lbs., 105 grains of pus from a gangrenous abscess in the muscles of the neck. Animal soon sunk to the ground; alvine evacuation; respiration accelerated, panting; attempts to vomit; neither ate or drank; *death in five hours.*

Expt. 21.—An Alsacian dog, 90 grains of the same pus; anhelation; diarrhœa; refusal to eat or drink; *death in eight hours.*

Expt. 27.—Dog 14 lbs., 60 grains of pus from an abscess in the thigh three weeks open; violent chill; feebleness of posterior extremities; refusal of food for eight days, and of water for four; escape from the house, choosing the very cold air outside; *death in eight days.* All the internal organs healthy, but a gangrenous abscess in the right thigh.

Expts. 28, 29, 30, 31, 32, 33.—Successive injections of pus; all fatal.

Expt. 34.—Injection of 75 grains of the serum of filtered pus, repeated four times. Death on the fifth day, without metastatic abscesses; animal in good health till nineteen hours before death.

Expt. 37.—Dog 23 lbs., 150 grains of filtered serum from the pus of a carious bone of the leg; second and third injection; great feebleness; death on the third day, without metastatic abscess.

Expt. 38.—Dog 40 lbs.; injection of filtered serum of laudable pus 150 grains—no effect. The same serum on second day injected in the same quantity, no effect. Third day slightly fœtid, same quantity; animal feeble, raised himself with difficulty. Fourth day, two injections of 75 grains, now fœtid. Death eight hours after the last. No abscesses, but hard knots in the lungs.

Expt. 41.—Successive injections of the filtered serum of pus from empyema; suppurative phlebitis; metastatic abscesses; hæmathorax; death on the eighth day.

Expt. 42.—Injection of 2500 grains of serum filtered pus, the pus of a lumbar abscess—no effect.

Expt. 44.—Dog 10 lbs. Injection of 45 grains of the globules of pus from an abscess in the arm, drawn the same day and kept at zero. Death on the third day—refusal of food; thirst; vomitings; feebleness; prolonged chills; tremblings; inflammation of the left eyelid, and of the cornea; ecchymotic spots in the lungs, but no abscesses.

The import of these experiments, and their relation to the disease we are considering, hardly require comment, especially when it is remembered that the uterine cavity is open to the ready access of air; that when inflammation has been recognized on its inner surface, it has often been of a character most likely to furnish a septic agent; and that the veins of the uterus are, after parturition, so arranged as to receive, either directly or secondarily, such septic agent, healthy or degenerated pus, in an augmenting and consequently accumulative stream.

Farther on, Dr. Clark said he might have occasion to remark on one or two of the other positions taken by Dr. Barker. It was sufficient for the present to say that the only question of importance on which they differed was—whatever might be the poisonous influence which produces the disease ; foul air of an ill-ventilated or over-crowded apartment ; the contagious principle given off by the sick person ; the contamination of erysipelas ; or, septic poison from a dead body, operating on the peculiar susceptibilities of the puerperal state;—whether puerperal fever, however produced, is really ever fatal before inflammation of some sort is developed, or without the concurrent agency of such inflammation. The argument of Dr. Barker had not convinced him that the ground he had taken at an early stage of this discussion was not defensible ; and he again submitted to the Academy, to be tested by their future, not by their past, experience, whether the form of puerperal fever, heretofore regarded as fatal without demonstrable lesion, is not *the fever* with *endometritis,* and consequent pyæmia or septico-pyæmia.

In turning to the treatment of puerperal fever, Dr. Clark said he was aware that he was expected to speak, not of the treatment in general, nor of the different modes of treatment adopted by physicians, but of the effects of opium. This would be the scope of his remarks, with only such additions as his observation had enabled him to make of the effects of veratrum viride and of one or two other agents. To show how his mind was led to rely on opium as a remedy in this disease, he would ask the indulgence of the Academy, while he recited the history of the exclusive opium treatment in simple and traumatic peritonitis.

The treatment of ordinary peritonitis, for which the graduates of the College of Physicians and Surgeons, and the pupils of the New York Hospital, have the sanction of those institutions, to as late a date as 1836, and probably till several years after that time, consists in bleeding, leeching, and the use of calomel and opium ; the calomel, given with the view of affecting the system as promptly as possible, and the opium to retain the calomel, being given in grain and half grain doses. Indeed, these were the means relied on by nearly the whole profession. In 1841, however, visiting Woodstock, in Vermont, Dr. Clark met there Dr. B. R. Palmer and Dr. H. H. Childs, and he found that these gentlemen had become attached to Armstrong's method, as it is commonly called. He saw, with Dr. Palmer, patients treated in that way doing much better than on the more generally adopted plan. In the spring of 1841, '2 or '3, probably in one of the earlier years, talking of these cases, Dr. Clark suggested to Dr. Palmer that probably opium was the curative agent in peritonitis, and that the bleeding might be safely omitted, if the effects of the drug were steadily kept up. The next season, when they met, Dr. Clark was able to report an increased confidence in his suggestion, for he had tried opium alone, and had been successful. This statement he makes on the authority of Dr. Palmer, for in the lapse of years he had himself quite forgotten how the thought originated. From that time, neither he nor Dr. Palmer had bled a patient with this disease, and he remembers but one instance in his own practice in which leeches have been used; and Dr. Palmer is now in the habit of saying, that with this treatment, peritonitis is no more formidable than a pneumonia. Up to 1850, Dr. Clark had treated eight cases successfully. In that year he saw his first unsuccessful case. The subject of the disease was a gentleman of some distinction, seen with Drs. Bulkley and J. M. Smith. In that case, however, it is proper to add, the disease probably gained much force, under the mask of a diarrhœa, before its true nature was recognized. Since that time he has lost but two in private practice, one in the practice of Dr. Gilman, and one in that of Dr. McNulty. In the first of these, there were some grounds for suspecting perforation, and in the second that accident was demonstrated after death. In the hospital there has, perhaps, been one death from the same cause in that period.

It was not till he had tried the opium in puerperal peritonitis that he became aware that his experience was but a confirmation of earlier observations; but it soothes his vanity somewhat, that among the many physicians here and elsewhere who talked about and adopted the treatment, there were none who, at that time, could enlighten his ignorance. The report of what Drs. Graves and Stokes had done, in the fifth volume of the Dublin Hospital Reports, had either not been seen by New York physicians, or had attracted but little attention, and had been forgotten. It is certain that the suggestions of Drs. Graves and Stokes were not adopted by the profession here, and, so far as is known, had not influenced the opinions of any practitioner in the city. In Dr. Graves's "Clinical Lectures," by Neligan (p. 244, vol. ii.), the following passage occurs: "The first case in which I used opium in peritonitis occurred in 1822, in the old Meath Hospital. It was that of a woman in whom the inflammation set in after the operation of tapping for dropsy. The case seemed so hopeless, and the sufferings of the patient so intense that I was induced to order opium for her in large doses. She also got wine. To my astonishment, she recovered. I afterwards published with Dr. Stokes our conjoined experience of the efficacy of this plan of treatment, in the fifth volume of the Dublin Hospital Reports." He adds, and the addition has a certain degree of significance; "The use of opium, in the form of peritonitis then described, is almost universally adopted," (that is, almost universally in Ireland). Dr. Graves, then, did not propose opium as a remedy for *peritonitis*, but for peritonitis *of a particular form.*

The following extracts from Armstrong's Lectures will explain his plan of using opium: 1. "The first and main remedy is blood-letting, carried to approaching syncope." 2. "As long as the tongue continues moist, opium with blood-letting may be considered a sovereign remedy." "As soon as the patient recovers from the syncope, give him, if an adult, three to five grains of opium." He goes on to say that if in four hours the pain returns, the bleeding should be repeated, and the patient should take two grains of opium, *with calomel;* and if two hours later there is still pain, he directs still another bleeding, and one and a half or two grains of opium, *with calomel.* "The opium," he says, "tends to arrest the secretions of the liver, but when combined with calomel, it has not that effect. Whenever, therefore, you repeat the opium, give calomel with it." The estimation in which Dr. Armstrong holds opium is emphatically announced in the following citation: "If I were subject, etc., and were only allowed to have opium or blood-letting, I would choose opium, though I would prefer both together."

Thus it appears that Graves proposed the use of opium for a particular form of peritonitis only, and Armstrong used it only as an auxiliary, though regarding it as rather the more benevolent agent among those he had chosen. It is not improper to add that the latter author startles our confidence a little, by a somewhat braggart air, and by figures that appear to us very large. He says: "I have treated nearly *three hundred* cases, with a success far greater than I have had from any other plan; and I could defy all the physicians of this country to show any more successful practice." Dr. Watson, in his Lectures (Am. Ed., 1847, p. 737), referring to the use of opium in peritonitis, says that; "A pamphlet was published some years ago, by Mr. Bates of Sudbury, recording some striking cases of recovery from severe peritonitis, under large and frequent doses of opium, and a rigid adherence to the horizontal position." It is not stated whether bleeding was resorted to in those cases or not. But Dr. Watson is not convinced of the propriety of relying on opium, either by Mr. Bates's pamphlet, or by the cases of Drs. Graves and Stokes, which he reviews; for he says: "To sum up, then, *bleeding, and calomel, and opium* are to be resorted to for checking the inflammation." "The opium," he says, "allays pain, and perhaps relaxes spasm; *mercury tends to arrest the inflammatory action.*" Dr. Clark presented the facts in this form, to secure for the opium treatment all the importance to which such independent and concurring observations should fairly entitle it.

But the history is not yet concluded, for said Dr. Clark, if I may not claim for myself the priority of the discovery, by just so much as I esteem it useful, I am happy to be able still to claim it for my country. To you, sir [addressing the president], our acknowledgments are due for having preserved on record the fact that the late Dr. Wright Post, of this city used this *magnum donum Dei*, to combat inflammations, before either of the physicians, whose authority is now so often quoted. Dr. Post, it seems, used opium in large doses "*for its paralyzing influence over disease*" of an inflammatory character, as early as 1804, and for enteritis in 1810, perhaps considerably earlier; for he seems to have been familiar with its use at that date. This pamphlet was published in 1829, before I was myself a student of medicine, and I became indebted to Dr. Van Buren, two or three years ago, for my first opportunity of perusing it. It is entitled a "Biographical Memoir of Wright, Post, M.D., late Professor of Anatomy, etc., by Valentine Mott, M.D.," etc.; and contains a letter from Dr. F. G. King, addressed to the author, which details these facts. It is worthy of republication at this time, when the virtues of opium are undergoing renewed investigation.*

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* See Dr. King's Letter to Dr. Mott.

The details of this opium treatment of peritonitis are so nearly identical with those of the same treatment applied to puerperal fever, that the management of the two diseases can be most conveniently spoken of together; and the hour being far advanced, it is better that both be postponed till another occasion. It is, perhaps, proper to say in closing, and in anticipation of what is to be said hereafter, that my confidence in the opium treatment of puerperal fever, with peritoneal complication, is in no degree shaken by accumulating experience, but is rather increased; while its usefulness in that form of the disease which is attended by purulent infection, has not been demonstrated, at least, as an exclusive method.

New York, Feb. 5th, 1829.

My dear Sir,

In reply to your inquiries as to the use of anodynes and opium by the late Dr. Post, I have to remark, that in conversation with him some two years past, relative to Dr. Armstrong's practice in inflammatory diseases, he told me that the use of opium, as recommended by that gentleman, (except in *larger doses,*) was corroborated by his own experience for a long series of years, and that to him it was by no means a novelty: for that in 1804, he was called to a child about three years of age, suffering under a violent pneumonic attack, accompanied by pain, cough, and febrile excitement. That he accordingly bled, blistered and evacuated the patient, afterwards placing him under the use of antimonials, but all without benefit. Matters proceeded from bad to worse, until the child, exhausted by constant cough and excessive restlessness, seemed nearly at the point of death. Under these circumstances, he determined to quiet all these irritating symptoms by a powerful anodyne, and accordingly exhibited 60 drops of laudanum. Two hours after, he was called to the child, then supposed by its parents to be dying. He found the features sunken, the surface covered with a cold clammy sweat, and secretions of an unpleasant appearance about the eyes and nostrils, but the pulse had diminished in frequency, and was more full; the respiration was slower and everything indicated the full and desired action of the anodyne. The parents were astonished to hear the physician say that the child would soon be better. The next morning all untoward symptoms had subsided, and the child became rapidly convalescent and recovered.

This was his first trial of anodynes in such affections; his *experiment,* if you please; but a few months afterwards, a similar case occurring, he immediately resorted to the anodyne; depletion and evacuants having been premised, and with similar success, since which period he has generally continued that mode of practice; latterly, however, substituting the Dover's powder in place of laudanum, in pneumonic attacks.

In 1810, he was called in consultation upon a gentleman in Jersey, suffering under enteritis. He found that he had been repeatedly bled, blistered and evacuated, but to no advantage; the pain still continued acute; the pulse was small, frequent and corded; the skin dry and hot. Under these circumstances he suggested the propriety of exhibiting a powerful anodyne, in order to quiet all irritation, and give nature an opportunity of recovering herself. After a little hesitation on the part of the attending physician, it was finally determined to adopt the course proposed, and 100 drops of laudanum were directed; an hour elapsed—no sensible effect having been produced, when the *dose was repeated*, and in half an hour the patient was under its full influence. He awoke the next day free from pain or tenderness, and so recovered. The same gentleman has been frequently attacked since with the same affection, and uniformly after being bled and evacuated, he has recourse to his anodyne, which rarely fails to quell the disease. But to be efficacious, the dose must be *heroic*, at least such was the opinion of Dr. Post, who often remarked that practitioners, especially in England and France, were not aware of the value of opium in inflammatory diseases, for even when employing it in such cases, their doses were too trivial to exert any marked influence over the malady. He himself always exhibited it under the opinion, that to obtain its soothing effect upon the system, and its *paralyzing* influence over the disease, it must be given in large doses. In diarrhœa and certain conditions of dysentery, after having cleansed the passages, he employed laudanum or Dover's powder with the happiest effect; in fact, he rarely used much else than salts and Dover's powder in diarrhœa, in adults. In his own case he was no less prodigal of anodynes than with his patients. Being, as you well know, for many years a constant prey to pleuritic affections, his treatment of himself was short and efficacious, viz. blisters and purgatives, followed by 80 or 100 drops of laudanum, which quieted his cough—allayed pain, and soon placed him in condition to resume his business.

In conclusion, permit me to state an occurrence which took place under my own eyes, two years previous to his death. He was then violently attacked with pleurisy, accompanied with much fever, for which he had been purged and blistered, and at the period in question, was under the use of antimonials. At this time he directed me to give him 70 drops of laudanum. I remonstrated, directing his attention to the dryness of his skin, its increased heat, and the frequency and hardness of his pulse. His answer was, " believe in my experience rather than in your theory; give me 70 or 80 drops of laudanum, and an hour will convince you of its propriety." It was given, and within the hour his pulse became calm, full and slow ; his skin was covered with a gentle perspiration, and his condition strikingly improved. He left his bed the next day, and frequently since has he said to me, " I think I have given you a clinical lecture that you will remember."

Such, my dear sir, are the facts concerning which we some time since conversed, and if they can be of any service to you, employ them as you think proper. Yours truly,

F. G. KING.

To V. MOTT, M.D.

PART SECOND.

CRITICAL ANALYSIS.

ART. VII.—*The Transactions of the American Medical Association*, vol. x., 1857. Philadelphia, 1857.

THE American Medical Association has now closed its first decennial period. As it contains the collective wisdom of the profession of the United States, it should contribute largely to the advancement of medical science. But it must be confessed, that the expectations of its originators and early friends have hardly been realized. Its yearly publications should be of such a character as to command a large and profitable sale, but instead of this, there are not sufficient purchasers for the small edition of one thousand copies. The fault is on the part of the profession, in not contributing a more liberal supply of reports and voluntary communications. There were only four competitors for the prizes at the meeting last May. As long as such remissness continues, the proceedings of the Association will necessarily lack that high order of merit, which we should expect from such a source.

There are, however, in the volume of the Transactions for the past year, several excellent papers, a brief review of which will be instructive.

Among the reports, is one by D. M. REESE, M.D., of this city, on the important subject of *Infant Mortality in Large Cities*. To prevent this mortality, he recommends legal enactments to prohibit the marriage of diseased individuals, to improve the condition of the residences of the poor, and to suppress distilleries, from which so many of the cows are fed that supply the poor with milk. He advises also the founding of children's hospitals, where the sick children of the indigent may have the benefit of pure air, cleanliness, and wholesome food. But according to the report, the great mortality is not confined to children of the poor. Among the wealthy of our cities, luxurious modes of life, so incompatible with healthy pregnancy and lactation, and the common practice of employing hired nurses, are fruitful sources of disease and death. The writer embraces in his remarks the subject of the death of the fœtus, and recommends the establishment of foundling hospitals, and lying-in asylums, as the surest means of preventing the frequent crime of abortion.

The report on the *Medico-Legal Duties of Coroners*, by A. J. SEMMES, M.D., of Washington, is a well-written contribution, and one that should be made more public than the sale of the Transactions will allow. After an interesting historical sketch of the office of coroner, and a recital and just deprecation of the evils attending it, as it is at present constituted, the report goes on to recommend a remodelling of the laws regulating the office, so that the coroner shall be appointed by judges of the criminal courts, shall be a regularly educated physician, shall hold his office during good behavior, shall at his discretion conduct the inquest in secrecy, associating with himself two other physicians, and instead of fees, shall receive a specific annual remuneration.

These suggestions deserve to be calmly considered. The known incompetency of many of our coroners, either from lack of natural talent, or of requisite medical education, gives importance to the suggestion of a different mode of appointment, and so much experience is required, in order to conduct an inquest properly, that the tenure of the office should certainly be longer than from one popular election to another. We want, too, no better evidence that the coroner should, at his discretion, conduct the investigation privately, than is afforded by the famous Burdell case, to which Dr. Semmes alludes.

There is but one report in the present volume on epidemics; this is by J. F. POSEY, M.D., *on the Topography and Epidemic Diseases of Georgia.* Its interest is entirely local.

The *Report on the use of Cinchona in Malarious Diseases,* by F. HINKLE, M.D., contains the author's experience in the use of this remedy. After a thorough and impartial trial of six years, he feels authorized to recommend the substitution of cinchona for quinia.

The next report is *on the Blending and Conversion of Types of Fever,* by C. G. REESE, M.D., of Wisconsin. The writer discusses his subject with fair ability, and concludes that conversion or blending of types of fever does not depend upon the introduction of a new and specific poison.

Prof. DUGAS, of Georgia, contributes a short but interesting *Report on a new Principle of Diagnosis in Dislocation of the Shoulder Joint,* with illustrations. The following proposition embraces the substance of this report: "If the fingers of the injured limb can be placed by the patient or by the surgeon upon the shoulder, while the elbow touches the thorax, *there can be no dislocation;* and if this cannot be done, there *must* be a dislocation." Prof. D. proceeds to prove this proposition, and establishes, in our opinion, a very important point in the diagnosis of this inquiry.

The following are interesting and valuable reports; the one by GEO. SUCKLEY, M.D., on the *Fauna and Medical Topography,* the other by J. G. COOPER, M.D., on the *Medical Flora, of Washington Territory.*

According to Dr. Suckley, the types of both birds and mammals of this whole region resemble more those of eastern Asia, than of the Atlantic States. Among the indigenous mammals are the buffalo, panther, badger, wolverine, the mountain sheep, mountain goat, beaver, otter, fox, pine marten, four species of bears, five or six of wolves, and several of deer, hares, marmots and squirrels. The common domestic animals, as the horse and ox, which have been introduced, thrive well, and some of them have become abundant. The author has collected about one hundred and sixty different species of birds, several of which belong to the grouse, snipe and dove families. The principal fish, found in the Columbia River, is the salmon, and as vast shoals of it abound, it is often the chief food of the Indian. In the salt water of the western section of the territory, there are many species of fish, some of which have not yet been described by naturalists. The only venomous reptile is the rattlesnake, the most common of which is the Crotalus Lucifer. This species is especially abundant among the basaltic rocks of the upper Columbia.

Numerous species of insects exist in the territory, the most interesting of which is a blistering fly, termed, by Dr. Leconte, of Philadelphia, the Lytta Cooperi. This insect is found on the flowers of the yarrow, and may yet be valuable for its vesicating property.

Among the medicinal plants are the conium maculatum, uva ursi, several species of the ranunculus, one of aconite, one and perhaps two of liquorice, one of valerian, two of arnica, one of gentian, and one of veratrum.

The diseases are more sthenic than those of the Atlantic States, and consequently bear the lancet better. Among the foreign residents, rheumatic affections, and among the natives, syphilis and consumption are most commonly met with. The Indians are acquainted with many cathartics, emetics, diuretics, and emmenagogues among the indigenous plants. They apply a heated stone to the abdomen in suppression of the lochial discharge, and employ old women to suck the surface of the body, in case of internal inflammation, in the belief that the evil spirit may be drawn out. The tail of the rattlesnake is employed as an ecbolic, and, as this agent is used for the same purpose, among different and distant tribes, Dr. Suckley is of opinion that there may be some virtue in it.

The next paper in the Transactions is the third part of Prof. HAMILTON's *Report on Deformities after Fractures.* This is one of the most valuable contributions ever made to American surgery. The report is entirely statistical, and therefore of permanent value, the writer having been engaged for years in collecting the materials from his own and the practice of other scientific and experienced surgeons. We now know the usual amount of deformity in cases of fracture, when treated skillfully, and a long-felt desideratum is supplied. As a work for reference in suits of malpractice, the report will be highly valued. We cannot, at this time, make it the subject of a more extended notice.

The last papers in the volume are the Prize Essays; one on the Excito-Secretory System of Nerves by Prof. H. F. CAMPBELL, of Georgia; the other by WM. A. HAMMOND, M.D., U.S.A., entitled Experimental Researches relative to the Nutritive Value and Physiological Effects of Albumen, Starch, and Gum.

The first of these is an elaboration of the doctrine previously promulgated by Prof. Campbell, and by Marshall Hall, namely, that the ganglionic system controls the secretory processes, and that in consequence of the extensive ramifications and connections of this system, agencies operating on distant parts, may excite or modify the secretions, The doctrine is important on account of its referring to nervous agency, many phenomena in the system, which have been attributed to revulsion or vicarious action.

The essay of Dr. Hammond is based on carefully conducted experiments on himself, from which he deduces the following conclusions :

1. That albumen may be assimilated into the system, in such quantity as to furnish a sufficiency of both nitrogen and carbon to the organism.

2. That under the use of an exclusively albuminous diet, the nitrogenous constituents of the urine are increased over the ordinary average amounts, though not in proportion to the quantity of albumen absorbed into the circulation.

3. That either some other means than the urine exist for the elimination of nitrogen from the system, or the excess (over two-thirds) is retained in the organism, even when the body is rapidly decreasing in weight.

4. That the continued use of albumen as an article of food increases the proportion of this substance (and of fibrin) in the blood, and in a short time causes it to appear in the urine.

5. That whilst pure albumen cannot be regarded as of itself adequate to supply the several wants of the system, there is no reason why, when associated with suitable inorganic matters, it should not support both life and health.

6. That starch can be assimilated by the absorbents in more than sufficient quantity to sustain the respiratory function.

7. That under its use, the nitrogenous constituents of the urine are very much reduced in amount, even below what would probably occur during inanition, and that although starch is not capable of nourishing the tissues, it is yet serviceable, aside from its heat-producing power in retarding their destructive metamorphosis.

8. That the continued use of highly amylaceous food causes the appearance of sugar in the urine.

9. That under the use of such aliments, the nitrogenous constituents of the blood are diminished, and the carbonaceous increased.

10. That gum is altogether incapable of assimilation, and therefore possesses no calorifacient or nutritive power whatever, but is on the contrary a source of irritation to the digestive organs.

11. That in consequence of the above facts, the solids of the urine, during the immediately preceding researches, were entirely derived from the waste of the tissues of the body, and the carbon exhaled by the lungs from the consumption of its fat.

12. That gum, when exclusively used as food, from the irritation it causes in the intestinal canal, and the fact of its non-assimilation, induces more constitutional disturbance than either starch or albumen, and that under a similar condition starch is more productive of ill consequences than albumen.

J. L. S.

Art. VIII.—*On the Constitutional Treatment of Female Diseases.* By Edward Rigby, M.D., etc., etc., (of London). Philadelphia, Blanchard & Lea, 1857, pp. 256.

Dr. Rigby offers this little volume "to that large portion of my professional brethren who, being engaged in general practice, have not been able to devote their special attention to a class of affections which, nevertheless, must frequently come under their notice."

This is the key note to the book, disarming much criticism, and conciliating the good wishes of all who desire to attract general attention to a class of diseases which has so long shrunk from notice, and eluded less intelligent methods of exploration.

Our author always writes conscientiously, from a careful personal observation, and much study; while the knowledge of German obstetric literature, so apparent in all his works, makes them valuable to that class of English and American physicians who are are fain to pick up the crumbs which fall to their share, in the shape of occasional translations and extracts.

It is much to be regretted that the valuable German contributions to obstetrics are not brought more generally within the reach of physicians ignorant of the language; and, most certainly, those of our brethren who would devote their time to this task would add greatly to our common stock of knowledge, and would deserve to be placed far above that American variety of leech, subsisting on reprints of English books, and besmearing them with notes of doubtful value.

We have, throughout this country, many German physicians, learned and accomplished men, who might employ their leisure most profitably to the profession and themselves in such a task; and we earnestly hope that these hastily-written lines may stimulate some such endeavor.

The subjects treated of by Dr. Rigby are the disorders of menstruation, uterine and vaginal discharges, inflammation of the os and cervix uteri, displacements of the uterus, of the bladder, polypus, fibrous tumor, malignant diseases, cauliflower excrescence and corroding ulcer, pruritus pudendi, diseases of the urethra, disorders, displacements and diseases of the ovary.

The title of the work does not at all compromise the author as an opponent of the local treatment of these diseases. His design is to oppose the abuse of these means, not their use; and, in our judgment, the tendency to exclusive local treatment is a natural error of the times, fallen into alike by some well acquainted with the subject, and by many who know nothing more than to apply caustics ignorantly, or, in the words of our author, "dishonestly."

It was but the other day that a woman applied to the reviewer, in much anxiety of mind as to the propriety of a course of treatment to which she had been subjected. Her sketch of symptoms presented no disorders of menstruation—history of vaginal discharges—nor indeed any symptoms which pointed clearly to the uterus. Her treatment had consisted in the application of caustic, every two or three days, for a long period of time. On examination, the vaginal cervix was wanting and the remains of the posterior lip agglutinated to the posterior vaginal wall—the os not sufficient to admit a sound, its circumference a cicatrix.

Another patient, now nearly well, has been cauterized and leeched for nearly two years without benefit. Her disease, which had not been recognized, consisted in prolapsus of the ovary deep down in the recto-vaginal pouch, where it could be grasped between one finger in the vagina and another in the rectum; and the uterus could be lifted away from the tumor by the uterine sound. This organ was entirely healthy, and the great sufferings of the patient have yielded principally to the use of the tartar-emetic ointment in the manner recommended by Dr. Rigby and others, and to position. At present the ovary has slipped beyond reach, and the characteristic pain has gone.

The tone of the work before us is moderate, well adapted to awaken an interest in the subject and stimulate further research; and, therefore, the purpose of the author, publisher and reviewer will best be answered by referring those interested in the matter to the book itself.

G. T. E. JR.

ART. IX.—*Das halisteretische Becken in seiner Weichheit und Dehnbarkeit während der Geburt durch neue Beobachtungen erläutert. Nebst allgemeinen Bemerkungen über Halisterese.* Von DR. KILIAN, Professor an der Universität zu Bonn. Bonn: bei Adolph Marcus, 1857.

The Halisteretic Pelvis in its Softness and Dilatability during Parturition; illustrated by some new observations. By H. F. KILIAN, professor in the University of Bonn. Bonn: Adolph Marcus, 1857, pp. 107. With four plates, three lithographic, and one wood-cut.

IN the number of this Journal for May, 1857, I gave an analysis of Dr. Kilian's work on Spondilolisthesis and Acanthopelis. The same author has very recently described another kind of pelvic deformity, which is even more interesting than those referred to. If Dr. Kilian was not already well known, this thesis alone would be sufficient to establish his reputation. It is altogether a classical work, and ought to be translated into the English language in order to enable every member of the profession to make himself fully acquainted with its contents. The scientific researches laid open in these pages are not confined to midwifery, but the pathologist as well as the physiologist will peruse them with equal interest.

This work is written with the intention of proving

I. That osteomalacia (halisteresis) and rachitis are diseases essentially different one from another.

II. That there are two kinds of osteomalacia, one to be called: O. psathyra (fracturosa), the other one: O. apsathyros (cohærens s. cerea).

The description and investigation (anatomical, chemical, and microscopical) of the latter section of osteomalacia illustrated by some of the most interesting observations, comprise the bulk of this work. In opposition to some of our most prominent men of the profession, such as Burdach, T. F. Meckel, T. Hunter, P. Frank, Boyer, Richter, Hohl, Scanzoni, etc., the author has always warmly defended his opinion, that the above-named affections of the osseous system were of a different nature. In 1829 he published a thesis on this question *

Dr. Kilian's opponents contend that rachitis is an osteomalacia of the growing bone, and osteomalacia the rachitis of the adult bone; that both diseases are curable by nature or by therapeutical treatment; that the symptoms, course, and pathological anatomy of both diseases are often the same; and, lastly, that the form of a rachitic pelvis sometimes is like that of an osteomalacic basin. Every one of these points is subjected to a severe criticism by Dr. Kilian, and their conclusions as to the identity of both diseases rejected. Dr. K. was the first obstetrical author who pointed out two different forms of osteomalacia, viz. the frangible (fracturosa, psathyra), and the waxlike, or a soft one (cerea, apsathyros). He considers their difference as depending not upon a different stage, but upon a difference in the nature of the softening process. The latter is characterized by the fact that the mollified bones remain soft and are never inclined to break even after violent movements, and injuries of the body, unless the disease is cured *by nature*, as it happens sometimes, *in consequence of a fresh and general deposition of salts.* The most remarkable cases of O. cerea are those of Anna Elizabeth Soupiot, related by Morand in 1752; of Elizabeth Forster, by William Cooper; and two observations, one by P. Frank, and one by Audibert.

The O. fracturosa, on the other hand, changes the skeleton in such a way that the bones break on the slightest occasion, as it happened in the case described by Renard in 1804, where his patient had broken her bones upwards of eighty times during her life. But these two peculiarities of osteomalacia are only observed after the disease has attained its utmost degree, while the bones in O. cerea in one stage of development are very much inclined to *infractions* (not *fractures*), the seat of which is always found in the external layers of the osseous tissue, while the centre is soft and pliable.

Both rachitic and osteomalacic bones constantly present *a want of (bony) salts*, but of a different nature. While in rachitic bones the chondrin elements are *not supplied* with a sufficient quantity of salts from the beginning, there is a constant *deduction* of salts from the adult or perfectly completed bone in osteomalacia. This is the chief difference in the pathological process of both diseases, and the author proposes to call this latter affection *halisteresis*,† instead of osteomalacia.

The rest of the work is devoted to a full chemical and microscopical investigation into the nature of halisteresis cerea, illustrated with some of the most remarkable cases ever recorded in the annals of obstetrical science, and which came under the author's own observation. They establish, beyond all doubt, the fact, that osteomalacic pelves, contracted to the utmost degree, and giving an absolute indication for Cesarian section become in some instances so much softened and dilatable by the act of parturition, that a full grown living child is pushed through them by the labor pains alone, or by force of an easy forceps operation.

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* *Beiträge zu einer genaueren Kenntniss der allgemeinen Knochenerweichung der Frauen, etc.* Bonn: Marcus.

† Derived from *ἅλς*, salt; and *στέρησις*, privation.

Among the first observations mentioned of pelves which were mollified during parturition, are to be noted those of Jos. Guich. Duverney, 1730, of J. P. Frank, 1788, of C. G. Schwalbe, 1828, and of G. Fleischmann, 1815. Lately, Dr. Murray Humphrey described a pelvis which was found soft and pliable, in a post mortem examination of a woman who died after Cesarian operation (*Assoc. Journal*, September, 1856). The outlines of a case are given in Dr. E. von Siebold's *Manual of Obstetrics*, 1854, where a woman with osteomalacic contraction of the pelvis, lying already on the table ready for Cesarian section, was delivered by turning, and extraction of a living child. In this instance, the softened bones yielded to the hand of the operator on entering the pelvic cavity.

One well observed case is described at length by John Welchmann, of Kington, Warwickshire (*The London Medical Journal*, vol. ii., 1790). After performing symphysiotomy on an osteomalacic pelvis, which was so much contracted that he was scarcely able to push his fore finger between the tubera ischii, a full grown child was suddenly expelled by two strong pains. The woman died six days later, and on examining the bones of this pelvis, they were found to be so soft that he could cut through all of them with "the greatest ease."

A similar well described case is that of Dr. Barlow, communicated by John Hull (*Observations on Mr. Simon's Detection, etc.*, March, 1794). The most important and reliable case on record is that of Dr. Weidmann (J. P. Weidmann, *De Forcipe Obstetricio, etc.* Moguntiaci, 1813–4, *c. tabul.*) Dr. W. was called in consultation to see a woman suffering the pains of her confinement. The fourth child was extracted by a difficult forceps operation ; the fifth one had to be removed by craniotomy, and since that time the pelvis was affected with osteomalacia, and had become so contracted that the attending physicians considered Cesarian operation as the only means for delivering the woman. Dr. W. advised to try artificial expansion of the bones. This was done ; first one, afterwards two and three fingers could be introduced into the pelvic cavity, till at last the full hand was received, the child turned, and easily extracted. The patient died five days after delivery, from exhaustion. The bones of the pelvis were found reduced to their former contraction, but even then dilatable.

A similar observation is that of Professor Ritgen (*Zeitschrift für Geburtsk.* 1831, Bd. vi., Heft 3), who found the pelvic bones dilatable eight weeks before the full term, in a female affected with far advanced osteomalacia.

Two equally well described cases are to be found in Dr. H. W. Spengel's thesis on this subject, published in Heidelberg, 1842, and another one by Dr. Lange, in the *Medic. Jahrl. für d. Herzogth.* Nassau. xi. H. Wiesb. 1853. The following cases came under the author's own observation.

Case 1.—Mrs. Clara Plott, of Cologne, was taken with a severe cold six months after her first confinement, after which she suffered for her lifetime from most distressing pains in her bones, especially during and after her second pregnancy. On March 16th, 1855, she was seized with the labor pains of her third child, and brought to the Cologne lying-in hospital. The pelvis was found to be so much contracted that even the introduction of the index, for vaginal examination, could not be attained, so that everything was prepared for the performance of the Cesarian operation. But suddenly, while laboring under violent pains, the woman exclaimed that the child was coming, and really the head of the fœtus became now visible between the labia pudendi, and in three minutes afterwards a living boy was born, of ten pounds' weight (medicinal). But the woman died four days afterwards from hectic fever. The entire corpse weighed only sixty-eight pounds, while all the organs differed very little from the normal state. The bones of the entire skeleton were soft and pliable. The arcus ossium pubis was so much compressed that the index finger was too large to be brought between the pubic bones ; the synostosis pubo-iliacæ stood only seven lines apart one from another. The lateral diameter of the pelvic entrance was 3½″, while the cavities of both acetabula were so much drawn together that the lateral diameter, in the midst of the pelvic canal, was no more than 1″ 8‴. The distance of the tubera ischii was 2″. The os sacrum was so much curved that the lower end of the os coccygis was only 3″ 6‴ distant from the promontorum. The pelvis was even now distensible in a great measure, and by gently trying to force the bones asunder, one could easily enlarge the pelvic cavity. The anterior section of the bones more especially, were so much softened that they resembled ligamentous structures, and when cut into, offered no more resistance than a fascia. A minute chemical analysis of the osteomalacic bones, conducted by Professor C. O. Weber, of Bonn, demonstrated one fact, viz., the diminution of phosphates, and the presence of lactic acid in the bones.

The microscopic analysis of a portion of the pelvis, made by Dr. Lambl, of Prague, resulted as follows : The alterations in the tissue, as detected by the microscope, resembled in many points those found in bones affected with ostitis and osteomyelitis. The succulence of the tissue that forms the marrow of the bones, seems to indicate an abnormal tendency of nutrition, in consequence of which an abundance of fluid matter is conducted to the bone, while the more solid elements are removed. But the consumption of bony particles in this specimen of osteomalacic bone, is of a peculiar character, the osseous fibres becoming soft, their striæ appearing very narrow, loose and transparent, *while they suffer no change in bulk or form.* This metamorphosis of osseous tissue into the original fibrous tissue, is the principal character of the pathological alteration.

Case 2.—Miss Catharine Becker, of Halsenbach, forty-one years of age, entered the lying-inn hospital of Bonn, April 8th, 1856, being pregnant for the first time. She was very much disfigured, especially in regard to the lower extremities, so that she walked lame and with difficulty. By vaginal examination it was discovered at once that the pelvis was of the osteomalacic stamp, so much so, that the index finger could not be easily advanced under the arcus ossium pubis, while two fingers were sufficient to fill up the space between the tubera ischii ; the os sacrum was so much curved that the os coccygis protruded upwards as far as to the entrance of the pelvis. The bones, though very much misshapen, *were perfectly solid and unyielding.* The child proved to be alive, and considering all circumstances, there was an absolute indication to deliver the woman by the Cesarian operation, she being too far advanced in pregnancy (thirty-seven weeks) for admitting induction of premature labor. April 24th, 1856, the first pains commenced early in the morning, and increased in strength so much, that at three o'clock P. M., after previous rupture of the membranes, the head of the child had passed the entrance of the pelvis, *driving asunder the pelvic bones, especially so the arcus pubis, while it advanced.* The pliability of the previously hard bones became now so evident, that not the least doubt of this fact was left with the attending physicians, Prof. Kilian, Drs. Nettekoven and Hillmann. But as the force of the pains slackened, and the woman began to feel exhausted, Prof. K. applied the forceps to the head of the child, which was extracted *very easily, the bones of the basin yielding as if they were made of gutta percha.* The weight of the full-grown child was 6⅔ pounds, the lateral diameter of the head being 3¼″, the greatest diameter 5″.

Thirty hours after the child was born, the pelvis was once more closely examined, when it was found that the bones continued to be pliable, and were even more so than during parturition, for *there was left not a particle of the osseous elements in the arcus pubis, the left portion of which was changed to a mere ligamentous substance,* so that it could be moved to and fro without offering the least resistance. Nine days afterwards the bones were again more consolidated and harder, and on the tenth day the woman got up and walked around the room. On entering the hospital the woman measured 4′, 2″, 11‴, while on May 17th she measured only 4′, 2″, 5‴, so that she lost 6‴ in height during twenty-four days after her confinement.

Case 3.—The following case was communicated to the author by Dr. Klaes. It happened on February 2d, 1857, in Brenig, a village near Bonn. When Dr. K. was called in to examine Mrs. Kau, he found the pelvis so much contracted that he was unable to introduce his forefinger any farther than to its second joint, so that it was out of the question to touch the os uteri. He therefore left at nine o'clock A.M., to summon some other physicians to assist him in the performance of Cesarian section, which was the only method left. When the doctor returned at three o'clock P. M., the child was already born, to his own and every one's astonishment. The experienced midwife who attended the woman during the absence of Dr. K., stated that under the most violent labor pains, the bones of the pelvis began to move asunder, and suffer the child to pass through the channel thus widened for its benefit.

The report of cases is concluded by a short notice and a wood-cut representation of a pelvis deposited in the pathological collection of Florence, Italy, the history of which closely resembles those described in this treatise.

In reviewing this subject, the author comes to the following conclusions :

1. There is a variety of osteomalacia or halisteresis which may be justly called O. cerea.
2. This form of osteomalacia can have such an influence on the pelvic bones in softening (not fracturing) them during parturition, that a full grown child may safely pass through the pelvic canal even if it was previously contracted to the utmost degree.
3. Therefore, every physician attending a case of even the highest contraction in an osteomalacic pelvis, has to take into consideration the facts presented in this work, and shape his indications in compliance with the experience resulting from these observations.

The last pages of this interesting article are intended to discuss and strengthen the value of these conclusions.

Even this short and incomplete analysis of Prof. Kilian's work on Halisteresis, will impress every one with its great importance, and excite a general desire to peruse the book.

E. NOEGGERATH.

ART. X.—1. *Report of the Surgical Staff of the Middlesex Hospital* to the Weekly Board and Governors, upon the Treatment of Cancerous Diseases in the Hospital, on the plan introduced by Dr. Fell. London, 1857, 8vo., pp. 114.

2. *A Treatise on Cancer and its Treatment.* By J. WELDON FELL, M.D., London, 1857, 8vo., pp. 95.

3. *New Discoveries relating to the Cure of Cancers;* wherein the Painful Methods of Cutting them off and Consuming them by Caustics are rejected, and that of Dissolving the CANCEROUS SUBSTANCE is recommended, with various instances of the Author's success in such practice on persons reputed incurable. In a letter to a friend, to which is added a Solution of some curious Problems, concerning the same Disease. By WILLIAM BECKETT, Surgeon. The second edition, with additions. London, 1712. 12mo., pp. 62.

4. *Surgical Tracts.* By the late J. O. JUSTAMOND, F. R. S. Collected by WILLIAM HOULSTON. London, 1789, 4to., pp. 394.

SELDOM has occasion required that we should step aside from our legitimate duties as journalist to notice in any way the doings of quackery; but the recent developments which have been made in a prominent hospital of the British metropolis will not permit us to remain silent. In an evil hour for the profession, the acts of, and the course pursued by, the Surgical Staff of Middlesex hospital have inflicted a deep injury upon the honor of legitimate medicine. The facts which have reached us are mainly these : An adventurer in medicine of more than doubtful ethical character was recommended to the executive authorities of the hospital in question, by its surgical staff, to be allowed to pursue *his plan* (?) of treatment under their superintendence, in the cancer wards (which were founded in 1791 by Samuel Whitbread, by a bequest of £3,500) of the hospital, and the terms proposed by the surgeons were the following :

1. That he should *in confidence* communicate to the surgical staff the nature of the remedies employed by him, the method of their preparation, and the mode of using them.

2. That twenty-five cases should be subjected by him to treatment during eight months.

3. That he should pledge himself to publish the full particulars of his system of treatment within a period of six months ; and in case of his failing to do so, that duty should be undertaken by themselves.

In one of the volumes, whose title stands at the head of the article, we find the reasons which lead the adventurer to the unprofessional course pursued, to be—fear that the information which he should set forth would be passed over with neglect—disrepute from injudicious application of the remedies by the hands of others—and a fear of being anticipated in the public mind as the originator of the plan. And thus during six months were the surgical staff of Middlesex hospital in silent *confidential* association, with one whose acts proved him to be of the quack species of the genus *homo*. Could such a contamination of the good name of the profession of medicine occur in this city ? The history of the past presents no such foul stain upon the medical character of the institutions of our city or country. God grant that the shadow of their fair name may never be less; and that they may never be disgraced by the charge of having fostered the design of an adventurer in identifying himself in character and respectability with them.

From a perusal of the materials before us we find that the peculiarities of treatment consist in the use of ointments, in which the sanguinaria canadensis and the chloride of zinc are claimed to be the active ingredients. The following extracts will give our readers an idea of the value claimed for these agents, and in the words of the *self-styled* originator of the plan himself :

"The first experiments made with the puccoon were upon ulcerative surfaces, and although months of continued application, yet the removal of the tumor was effected, and the patient cured. It was then combined with various substances with a view to hasten its action; but none appeared to do so well as the chloride of zinc, for with this compound large ulcerated tumors were removed in a few weeks with comparatively little, and in many cases, no pain ; at the same time obtaining by absorption, and by the internal use, all the good effects of the puccoon.

"The next effect was to adapt the treatment to non-ulcerated tumors ; and as a preliminary step, the cutis was destroyed with nitric acid, and the paste applied ; but it was found that the eschar produced by each application was so thin, that it would require a long time to remove a large tumor.

"Incisions about half an inch apart were then made through the eschar, avoiding the living tissues, and the paste spread upon strips of cotton inserted into them daily; this plan succeeded admirably, and is *believed to be entirely original.*

"It was also found that although the action of the puccoon was much hastened by the addition of the zinc, yet it was slow enough to allow its complete absorption, thereby enabling it to exert its peculiar constitutional effects, and at the same time removing the diseased mass in a few weeks.

"The compound generally used is prepared according to the following formula :

℞ Sanguinariæ Canadensis, ℥ss. vel. ℥i.
Chlor. Zinc, ℥ss. vel. ℥ij.
Aquæ, ℥ij.
Pulv. Sem. Tritic. Hibern., q. s.

Mix, and form a paste the consistence of treacle.

"Sometimes the sanguinaria is used in the form of a decoction, by boiling it down in water from four to two ounces; in this case no water is used in mixing the paste.

"The proportions of the sanguinaria and zinc varied in the different cases according to the effect produced.

"This is spread upon strips of cloth, cotton or wool, and inserted daily into the incisions ; generally in the course of two to four weeks the disease is destroyed, and the mass falls out in the course of ten or fourteen days afterwards, leaving a flat, healthy sore, which generally heals with great rapidity. This treatment refers chiefly to those cases that are well marked, or that have made some progress in their destructive career ; but we often meet with other cases of an incipient nature, where the disease, although fully developed, is still in a quiescent or dormant state. In such cases, I often accomplish a cure by means of absorption, giving no pain to the patient, and not injuring or removing any important part, as the breast, which must occur if the first mode of treatment is resorted to. Not only is this of use in incipient cancer, but I have seen it of much use when applied to the lymphatic glands, which had become secondarily affected. In such cases, I remove the part primarily affected *en masse*, by means of the Sanguinaria paste, applying at the same time the following ointment spread upon cotton, over the enlarged gland or secondary tumor. This ointment is composed as follows (and is called the brown ointment):

℞. Sulph. zinc, ℥vi.
Sanguinariæ, ℥ij.
Myricæ ceriferæ, ℥j.
Extr. opii. (aquos).
Ext. conii, *a a*, ʒvi.
Ung. cetacei, ℥vi.
Misce, et fiat ungt.

"In conjunction with this preparation, I use an ointment of the iodide of lead, generally applying each twelve hours alternately. The following is the formula used :

℞. Iod. plumbi, ℈j.
Glycerine, ʒj.
Ungt. cetacei, ℥ij.
Misce. et fiat ungt.

"With a steady, persevering use of these two ointments, I have often dispersed incipient tumors, which I have no doubt were cancerous.

"These are the external means of treatment I employ, which, although in themselves eminently successful, yet I am not content with them alone, but also pay particular attention to the general health, ordering a nourishing and sustaining diet, besides giving internally the puccoon in small and repeated doses. A remedy that exerts so much influence when applied externally, must be exhibited with caution, I therefore seldom exceed half grain doses, three times daily. This is given in the powder or decoction ; in the former cases, I give it alone or combined with the sixteenth or twentieth of a grain of iodide of arsenic and one grain of the extract of cicuta, made into a pill ; or, if given in decoction, I generally combine it with the fluid extract of taraxacum.

"The ointment of the sulphate of zinc I have been in the habit of applying with marked success in cancer of the womb. Unlike the Vienna paste, it can be applied not only with safety, but with impunity, as it does not injure the adjoining tender parts."

In the report of the surgical staff of Middlesex hospital, the first general question which is considered is that of "The constitutional effects of the treatment." The opinion of the surgeons on this point is exceedingly indefinite. Those patients who were compelled to take opiates to relieve their pain while under treatment, and in those in whom the disease was not arrested, the general health of the patients was worse than it would have been if the disease had been left to itself. In forty-seven cases reported, it turns out that in eighteen the disease was not arrested. It is also stated that the treatment exerts no special power over the cancerous diathesis ; healthy and morbid parts are alike destroyed in the same ratio of facility. The reporters express the belief that sanguinaria is worthless as a diathetic agent in cancer.

The local effects of the treatment are next considered. The inflammation in the parts adjacent to the eschars produced by the treatment was unusually slight, and not attended by the formation of secondary abscesses. The local effects upon the cancerous energy is spoken of as follows : "in some the treatment seemed to give rise to a rapid deposit of new cancerous material ;" again, "in other cases, though rapid growth took place during the treatment, it was not aggravated and could be finally overcome ;" and, "in a third class of cases the previously rapid growth seemed to be brought to a check." The pain attendant upon the treatment is thus spoken of, "Considering the whole subject of pain, our observation leads us to say that as a general rule, it was severe at some time or other in every case." Again, "the severest suffering was that attending the treatment of epithelial cancers, especially of the face, on the ulcerated surfaces of which even the diluted paste could scarcely be endured. Some patients so suffering were obliged to give up the treatment, and leave the hospital unrelieved."

The results of the treatment, by reference to the appendix of the report, in which forty-seven cases are represented as being under treatment, may thus be summed up. In fifteen cases the growth was removed, and at the time of making the report there had been no return of the disease; in seven the growth was removed, but the cicatrix not reported as healed; in eight, the treatment was useless; in six, the disease returned; in five, the growth was not removed—the condition of the patients improved; in two, the disease was not cancerous; in two, the patients died under treatment; one was made so much worse that the treatment was suspended; and one would not submit longer to treatment.

Fnally, in the following words of the report we have the clearly expressed opinion of the surgeons of Middlesex hospital that "the sanguinaria is inert—the chloride of zinc paste was known before; but the incisions constitute a new feature in the treatment of cancerous tumors, for which we find no parallel in the writings of the past, or in the practice of present surgeons." The stupidity which characterized the first step of the Middlesex surgical staff, in departing from the standard of medical ethics, so far as to associate with one who pretended to cure by a secret remedy, and who had descended to the course pursued by boasting adventurers in medicine, here finds its parallel in the ignorance which is exhibited of the literature of the subject over which they sit in judgment.

In the pamphlet of Beckett, we find that incisions constitute a part of the treatment; we subjoin the following account of the course he pursued in a case in which the cancerous tumor was situated beneath the tongue. The difficulties which he encountered in its removal "put me," says he, "upon a necessity of making incisions into the body of the tumor, that I might commodiously come to the remaining part, and so dispose some little dossels of lint, armed with our dissolvent that they might have their desired effect, and this in every respect answered what we proposed; so that we proceeded immediately to incarn the ulcer, which we did by a lotion prepared of an infusion of some vulnerary herbs and *Mel Rosar.* Thus was this woman perfectly cured, and has continued well about a year."

In the surgical tracts of Justamond we find that he resorted to the use of incisions into the dead tissues and diseased mass in order to facilitate the action of the agents he used. But our space will not allow of our quoting his own language. We must bring this notice to a close, and therefore will only add that the incisions, which, according to the surgeons of Middlesex hospital "constitute a new feature in the treatment of cancerous tumors" *has a parallel in the past,* in at least the writings of Beckett and Justamond, who, if we mistake not, were both in their time surgeons of London hospitals. S. S. P.

BIBLIOGRAPHICAL NOTICES.

ART. XI.—*Clinical Lectures on the Diseases of Women and Children.* By GUNNING S. BEDFORD, A.M., M.D., Prof. of Obstetrics, the Diseases of Women and Children, and Clinical Midwifery, in the University of New York. Fifth edition, carefully revised and enlarged. New York: Samuel S. and William Wood, 1857, pp. 604.

THE success of this work is altogether unprecedented—a fifth edition being demanded in a little more than two years from its first issue. It has been received thus favorably not only by the profession at large, but by the medical press of this country and of Europe. Some of the most eminent writers in this department abroad, have spoken of the work in terms of commendation, which must be gratifying to the author. In the preface to this edition, Prof. Bedford gracefully acknowledges the compliments so universally bestowed upon his book. The fifth edition has been carefully revised, and useful additions have been made to the formulæ of remedies.

ART. XII.—*A Dictionary of Medical Science, containing a concise explanation of the various subjects and terms of anatomy, etc., with French and other synonymes.* By ROBLEY DUNGLISON, M.D., L.L D., Prof. of the Institutes of Medicine, etc. Revised and very greatly enlarged. Philadelphia: Blanchard and Lea, 1857, pp. 992.

THE present is the *fifteenth edition* of this popular Medical Dictionary. The work is now in such general use among medical men, that it requires no words of commendation from us. This edition is the result of careful revision, and contains an addition of about 6000 subjects and terms.

ART. XIII.—*The Hand-Book of Practical Receipts, of Every-day Use: a manual for the Chemist, Druggist, Medical Practitioner, Manufacturer, and Heads of Families;* comprising the officinal medicines, their uses and modes of preparation, and formulæ for trade preparations, mineral waters, powders, beverages, dietetic articles, perfumery, cosmetics, etc. A Glossary of the terms used in chemistry and medicine, including old names, contractions, vulgar and scientific denominations, with a copious index to all the preparations. By THOMAS F. BRANSTON. First American from the second London edition. Philadelphia: Lindsay and Blakiston, 1857, pp. 307.

THIS is a very convenient manual of reference for the physician. It contains full and accurate descriptions of all chemical and pharmaceutical preparations, as also of their ingredients; of all the various substances used in the arts, and in household economy.

Art. XIV.—*The Practice of Surgery.* By James Miller, F.R.S.E., etc., Professor of Surgery in the University of Edinburgh, etc., etc. Revised by the American editor. Fourth American, from the last Edinburgh edition, illustrated by three hundred and sixty-four engravings on wood. Philadelphia: Blanchard and Lea, 1857, pp. 682.

The present edition of this work has been improved by the addition of matter relating to the progress of American surgery, and numerous wood-cut illustrations.

Art. XV.—*A Practical Treatise on the Diseases of Children.* By J. Forsyth Meigs, M.D., Fellow of the College of Physicians of Philadelphia, etc., etc. Third edition, carefully revised. Philadelphia: Lindsay and Blakiston, 1858, pp. 724.

The third edition of Dr. Meigs's work has undergone thorough revision, and ranks now among the most complete treatises on the diseases of children accessible to the American practitioner.

Art. XVI.—*Materia Medica and Therapeutics; with ample illustrations of practice in all the departments of medical science, and very copious notes of Toxicology, suited to the wants of medical students, practitioners and teachers.* A new edition, revised and enlarged. By Thomas D. Mitchell, A.M., M.D., Professor of Materia Medica and General Therapeutics in Jefferson Medical College, etc., etc. Philadelphia: J. B. Lippincott and Co., 1857,

We prefer to allow the author of this work to speak of the merits of this edition in his own quaint but happy style. "It is said that nobody reads a preface, and whether this be read or not, is immaterial. It is written chiefly to say that the author has carefully revised the work, and brought it down fully to the present time. As a consequence, the bulk of the volume is augmented, a circumstance altogether unavoidable. He has added his own experience on various points, and the best testimony of the great world of physic, with the design of putting a book of real value into the hands of students and practitioners. Theoretical notions, which are but too often of mushroom stability, have been almost entirely eschewed, and the book is therefore chiefly a volume of facts, quite as reliable as any to be furnished by the profession anywhere."

PART THIRD.

MEDICAL RETROSPECT.

Report on the recent Advances of the Medical Sciences in France; prepared for the New York Journal of Medicine. By E. Brown-Séquard, M.D., Professor in the Cooper Institute, New York.

PHYSIOLOGY.

1. *Glucogeny.*—There is something discouraging in finding every day that the most seductive theories, and even those which seemed to be most solidly grounded, are not true, and that, after having had everything more or less completely settled in our mind, concerning a number of facts on the same subject—after having had what we were entitled to admit as a sound and safe explanation, we must give it up, acknowledging that it is a deceitful one, and that we must look for another. But when new facts of great importance are discovered and real advances are made in science and in its applications, we may easily console ourselves for the loss of our theories. These reflections come naturally, when we study what has recently taken place concerning the formation of sugar in the animal body, *i. e.* glucogeny. Every one knows upon what grounds Prof. C. Bernard had established his views concerning the formation of sugar by the liver. He had found a great deal of sugar in the liver and in the blood, going away from this gland, and he never found sugar in the blood going to the liver in animals, fed upon meat or deprived of food. It seemed positive from these facts that the liver produced sugar, which, according to Bernard, being brought into the blood and circulating with it through the heart and the lungs, was destroyed in these organs. It is well known that M. Figuier tried to prove that the views of Prof. Bernard were not correct. He thought that the liver was an organ in which sugar coming from the digested food, accumulated, and that there always was sugar in the portal blood in animals that had been fed only upon meat, showing that meat in the bowels may give origin to sugar. If, according to M. Figuier and M. Longot, sugar is not easily detected in the portal blood, it is because the presence of certain albuminous substances prevents the ordinary reactions from taking place. Bernard and Lehmann replied that, in adding to the portal blood a very small quantity of sugar, they always had the characteristic reactions, while they had none or hardly any when they had not added sugar. About eight months ago Bernard made the startling discovery that after having washed away not only all the blood contained in the liver, but also the previously formed sugar, there was a rapid formation of sugar taking place

without blood in this gland. Some time afterward he extracted from the liver a peculiar substance which he called glycogenic, on account of its property of spontaneous transformation into sugar. This fact seemed at first, to settle the question, when a veterinary physician of Toulouse, M. Sanson, found dextrin in the liver, in the lungs, in the spine, in the kidneys, etc. Bernard replied that the glycogenic substance of the liver is different from dextrin, and he tried to show that the presence of dextrin in the principal organs and in the blood, depends only on the kind of food, while the glycogenic substance of the liver may be formed with any food or without any food. But now the question has become much larger, as many micrographers and chemists (Virchow, Carter, Bush, Bertholot, Schrant, etc.), have found that normally, many elements exist in the body which may easily be transformed into sugar, so that any organ may be considered as able to produce sugar. However, it remains certain that the liver is the principal focus of the production of glucose, and if Bernard has been mistaken in trying to show that the formation of this substance is a function belonging solely to the liver, he has, nevertheless, opened the way to the discovery of the very facts which seem to shake his theories.

2. *Absorption of fatty substances.*—Messrs. Bernard and Colin have undertaken to show that the extirpation of the pancreas does not prevent this absorption and the formation of milky chyle. In admitting that they are right, and that Prof. Bernard has been mistaken in asserting that the formation of the chyle is due solely to the absorption of fat emulsioned by pancreatic juice, the principal fact discovered by Bernard remains, nevertheless, exact ; pancreatic juice is the only digestive fluid which makes a complete emulsion with fat. But it may be also, that in animals deprived of the pancreas, other glands secrete some of the principles which constitute the pancreatic juice, as other glands secrete urea when the kidneys have been extirpated.

3. *Transmission of sensitive impressions.*—The writer of this letter has found by experiments on animals, and by clinical facts, that the sensitive impressions which come from the right side of the body go up to the brain in the left side of the spinal cord, et vice versa. Lately, M. Chauveau has tried to explain otherwise one of our experiments, which consists in dividing transversely a lateral half of the spinal cord. According to M. Chauveau, there is truly more pain than usual, when the limb behind and on the side of the section is irritated, but this pain does not proceed directly from this limb, and it is due to reflex contractions in the three other limbs. There are two facts which may be easily observed, showing that this interpretation must be rejected : 1st. The contractions in the three non-paralyzed limbs often take place only after the animal has shown by crying that it felt pain. 2d. Sometimes there are no contractions in these limbs, and nevertheless, the animal cries. Besides, in man, in cases of alteration of one side of the spinal cord, sensibility remains in the parts of the body on the same side, whilst it is lost on the opposite side.

4. *Laws of muscular irritability, cadaveric rigidity and putrefaction.*—In the paper read at the *Académie des Sciences* on this subject, the writer has tried to show that every contraction, some time before death, determines in muscles a peculiar change which after death hastens the appearance of cadaveric rigidity, and of putrefaction. It is true that rigidity and putrefaction appear soon when convulsions have been violent, and last a long while in tetanus, in hydrophobia, in certain poisonings; so it is also in animals and men killed by lightning, in animals hunted to death, in cocks after a long fight, etc.

PRACTICE OF MEDICINE.

1. *Means of detecting albumen in urine.*—Dr. C. Gigon has made numerous experiments on the various tests of albumen in urine. He thinks he has ascertained the presence of this principle in normal urine, and he goes so far as to state that it is always to be found. This seems to be in opposition with Becquerel and Vernois, who think that albumen in urine is constantly a symptom of alteration of the kidneys. We have seen, long ago, that albumen taken in excess, as food, passes into the urine, and we could not admit the ideas of Messrs. Becquerel and Vernois. Now, the facts put forward by M. Gigon show conclusively the error of these chemists. One of the causes of the discovery of M. Gigon consists in his having made use of chloroform as a test. It seems that chloroform is the most powerful agent of coagulation for the albumen; only *one thousandth* of albumen in water may be detected by it. This, M. G. says he has ascertained not only with urine, but with the serum of blood. It seems to me quite strange, if this be correct, that death does not take place more often when chloroform is inhaled. M. G. says that when there is but very little albumen in a solution, (urine or serum) after a few drops of chloroform have been added to the solution, it is necessary to shake it to obtain a precipitate. The following tests of albumen are disposed in a series beginning with the least sensitive, and ending with the most sensitive : 1. Heat. 2. Pure alcohol. 3. Neutral acetate of lead. 4. Bi-chloride of mercury. 5. Nitrate of silver. 6. Nitric acid. 7. Sub-acetate of lead. 8. Tannin. 9. Creosote. 10. Chloroform. With the help of chloroform M. G. says he has ascertained that there is always in the urine of adults as well as of children a quantity of albumen which he thinks to be the seven or eight hundredth part.

2. *Means of detecting sugar in the urine.*—M. Leconte has published a paper in which he tries to show that Dr. Blot has been mistaken in admitting that there is sugar, as a normal, or rather a constant element of urine in nursing women when they are in good health. M. Leconte attributes the decomposition of the salt of copper by the urine of these women to the uric acid. But Dr. Blot had ascertained the presence of sugar not only by the precipitate of oxide of copper in making use of Fehling's test, but also with the polarimeter, and by the result of fermentation. M. Leconte, however, is right in one thing, which is that uric acid may give a precipitate with all the

tests containing a salt of copper. If we must attribute only to uric acid the large precipitate formed in treating the urine of nursing women with one of these tests, then the quantity of uric acid is very much increased in these women. A Dutch Physician, Heynsius, has recently proposed a new view of this subject ; he thinks that the substance mistaken for sugar, and acting like it, in the urine, is a peculiar one, and only differing from sugar by some few characters. Whatever may be the interpretation of the positive facts discovered by Blot, their practical value remains entire. In a nursing woman in good health, the urine precipitates oxide of copper with Fehling's or Trommer's test, while if a serious disease exists, or is to come in a day or two, there is no more precipitate.

3. *Obliteration of the superior vena cava.*—Dr. Oulmont has published a remarkable paper on this rare and little known affection. He has observed four cases and found fifteen other cases in various books or journals. He divides these cases into two categories, in one of which the obliteration is due to concretion or internal tumors, while in the other he places the cases of external pressure upon the vein. Of his nineteen cases there are five of coagulation of blood in the vein, three of internal cancer, five of cancerous tumors of the mediastinum or lungs, two of tuberculous ganglions, four of aneurisms of the aorta. Ordinarily the first symptoms are coughing and dyspnœa, sometimes amounting to intense orthopnœa. In some cases there has been blood with the mucus of the expectoration, and even a real hæmoptysis or hæmatemesis, with palpitations of the heart. In other cases the first symptoms have been cephalalgia, vertigo and cerebral congestions. In some cases a very prominent symptom of the disease, and a constant one after a time, œdema of the face has been the first observed. It begins either on one or the other side of the face, quickly extending to the whole of it, and to the forehead and pericranium. The neck and the superior limbs become afterward infiltrated, and at last the œdema reaches the chest and the upper part of the abdomen, rarely extending further down, while the inferior limbs are perfectly normal. There is in the face and other infiltrated parts a bluish color, giving the appearance of cyanosis. All the superficial veins are more or less enlarged.

After a time cephalalgia and vertigo are almost immediately produced at every movement ; sometimes there is a real attack of apoplexy.

Among the other symptoms we will point out ; insomnia, various hemorrhages (from the nose, the lungs, or the stomach), fits of suffocation, cough, etc. The pulse, strange to say, remains usually quiet, except at the end of the disease, when fever supervenes. Frequently there are palpitations, and sometimes albumen in the urine.

All these symptoms increase gradually, and, at last, delirium, coma, agitation, fever appear, and are soon followed by death. In some cases death came suddenly and quite unexpectedly. We need scarcely say that unfortunately, there is nothing to be done in the way of treatment in this disease, except complete rest, the avoidance of emotions and of stimulating food and drinks.

4. *Ophthalmia by reflex action.*—Much has been said lately of reflex disturbances of nutrition and secretion, but there is not a great deal of novelty in what has been said, as may be seen by those who will read a little old book which contains a great many facts of this kind; it is the work of a celebrated Dutch Physician of the last century, entitled, *De sympathiâ, seu consensu partium corporis humani, ac potissimum ventriculi, in statu morboso,* Dissertatio medica, Authore, H. J. Rega.—Harlemi, 1721. But whether it be new or not, it is very interesting to know that, the irritation of certain nerves particularly, may produce inflammations and other alterations of nutrition or of secretion at a great distance; the following case is very instructive in this respect:

A man had an ophthalmia of the right eye; for many months various kinds of energetic treatment failed to cure him, and all treatment was abandoned. But the left eye also became attacked, and again various means of treatment failed to diminish the double ophthalmia. Local means being unsuccessful, general means were employed, but also without success. The face of the patient was red, injected; he had a constant cephalalgia and a blowing sound in the ears, which prevented sleep, and he was deaf at times. The ears being examined by Dr. Busschaert, who relates this case, they were found to contain a great quantity of thick cerumen. This being taken away, almost all the symptoms disappeared at once, and, in five or six days, the ophthalmia was cured and the eyes had returned to their normal state. Dr. B. has known a patient who was cured at once of a persistent headache by the same means. We may add that epilepsy has been caused by an accumulation of cerumen and cured by its extraction. As regards ophthalmia, the branches of the fifth pair which cause it most easily by a reflex action, are the infra and the supra-orbitalis. In this is to be found the explanation of the sudden cures of ophthalmia resulting from a contusion of the frontal nerve, when this nerve is divided between the contused part and the encephalon, as has been done by Wardrop, Beck, and others.

Concerning the theory of reflex secretions there has been, for some time, a somewhat strange discussion of priority, between Dr. H. F. Campbell, of Augusta Ga., and the late Dr. Marshall Hall. Not only neither of them had any right of priority in this respect, but, still more, the questions concerning the reflex secretions and the reflex changes in nutrition, had been carried much farther than the point that these two able physicians thought they had been first to establish. The main thing now to be examined, is whether in the reflex phenomena of nutrition and secretion, the centrifugal nerves act by producing a contraction of blood-vessels, or by a special electric or nervous influence. For the readers of this review who would like to study this question, I will say that there are facts concerning it in the various works of Henle, published already in 1840 and 1841, in the treatises of physiology by Ludwig, by Donders, and by O. Funke, in the *Pathologische Physiologie* of Spiess and in my little work on epilepsy recently published in Boston.

5. *Grave jaundice; its pathology.*—M. Ozanam has well described

the symptoms of this fatal disease, the pathological anatomy of which has been recently studied M. Ch. Robin. Lately an interesting case has been observed at the *Charité* by M. Hiffelsheim. A man was brought to this hospital, presenting only these two symptoms worthy of attention ; weakness and jaundice. The mind was clear, and the patient complained of having been indisposed only for a few days. The same evening (on the admission day) he was found cold, stupid, or rather in a comatose state ; his pulse was small, very slow, and very soft ; the beatings of the heart hardly perceptible. During the night he died. No organ seemed to be diseased except the liver, which being examined by M. Robin was found to be altered exactly as in all the similar cases in which this organ has been examined by this able anatomist. The characteristic alteration consists in the destruction of the hepatic cells, which destruction has been found in almost the whole of the liver in the five or six cases observed by Robin. In place of the polyhedric cells, the microscope showed a peculiar amorphous matter, finely granulated, half solid, transparent, containing an immense quantity of granulations and *no oil.* A few altered cells filled with fatty granules were also found.

6. *Catheterism of the larynx in croup, etc.*—M. Loiseau sometime ago presented to the *Académie de Médecine*, some new instruments for the catheterism of the larynx, and a short time since he had an opportunity of showing the usefulness of the principal of these instruments, which is a laryngeal tube. A little girl, four years old, attacked with croup, was admitted at the *Hôtel-Dieu ;* M. Blondeau, the *Chef de clinique*, resolved to make use of M. Loiseau's instrument. He introduced his forefinger into the mouth, and, having reached the epiglottis, kept it up, so that it became easy to pass the tube in the larynx. The introduction of the tube in the cavity of this organ was known at once to have taken place, by the sound indicating the passage of air in the tube. An injection of a saturated solution of sulphate of copper was then made, and the tube immediately withdrawn. The child seemed to suffer only when the finger lifted up the epiglottis, and gave no sign of pain when the tube was introduced, and the injection made. The next day the child was better. Three times more the catheterism and the injection were employed by Prof. Trousseau, and after each time the child became better, and three days after the last, the child was well, though there was still a slight hoarseness. We will let this case tell its own tale, and add only that there cannot have been any mistake in the diagnosis.

7. *Treatment of malignant pustule.*—M. Raphael, a learned physician of Provins, a pupil of Nélaton, has astonished the *Académie de Médecine* by announcing that he had cured four patients attacked with this carbuncular affection, by merely applying the leaves of the walnut tree on the pustule. Many doubts have been expressed concerning the possibility of such cures, and it has been asserted that M. Raphael must have made some mistake of diagnosis. A physician of the south of France, where this affection is frequent, had already treated with success *forty* patients, by the application of walnut leaves. It is

difficult to admit that errors of diagnosis have so often been made. Two able physicians, Messrs. Salmon and Mannoury, have nevertheless tried to prove that very frequently ordinary carbuncular affections are mistaken for malignant pustules, and they assert that the only means often of deciding the nature of the disease, is to inoculate the pus in animals, and ascertain if it be contagious or not. Besides, they relate a case in which the application of walnut leaves has been followed by death.

8. *Naphtha oil against favus.*—M. Chapelle asserts that this substance cures favus very quickly. He first has the head shaved, and applies a poultice upon it, so as to render the pustules as free as possible from all the coagulated or dessicated matters. He then applies a thin layer of naphtha on the whole surface of the head. This application must be made twice a day, and the head must be washed with soap and water before each. All the purulent vesicles found must be opened, and the pus expelled. When there is pain on application of the naphtha oil, another and not exciting oil must be mixed with it.

9. *Treatment of dysentery.*—Prof. Piorry read a report on a paper of M. Hamon on this subject, at the *Académie de Médecine.* M. Hamon has seen two epidemics of dysentery, and has employed with the greatest success the sulphate of alumina and potassa in injections. In children the dose must be from one to four grammes (20 to 80 grains), and four to eight grammes in adults. In one place thirty-five patients treated by this means have been cured ; in another place, out of forty patients, two old men only have died. We remember that a physician in the French army, Dr. Barthez, has obtained great advantage of this mode of treatment in Algeria, where dysentery is very violent.

10. *Bronzed skin and disease of the supra-renal capsules.*—Our friend, M. Charcot, brought some time ago to the Société de Biologie, the supra-renal capsules of an old man, who died, after having offered all the symptoms described by Dr. T. Addison. In merely examining the capsules with the naked eye, they did not seem to be altered, but the microscope showed that their usual elements had in a great measure disappeared, and been replaced by fat ; and the reactions offered by various tests, and particularly iodine, with the normal tissue of these glands, did not exist with the tissue of those presented by M. Charcot. This is an important fact, as it renders entirely null all these cases of bronzed skins, in which the capsules not examined with the microscope, have been declared healthy.

11. *Epilepsy ; successful treatment.*—There are three cases in which epilepsy or epileptiform convulsions have been cured. In one of these cases, which is very interesting, and shows clearly the power of an irritation upon sensitive nerves, to produce epileptiform convulsions, there were larvæ of some insects in the frontal sinuses of a young girl, who was completely cured after having long been sick, as soon as the larvæ had been killed by the smoke of segars containing arseniate of soda. This curious case, sent to the *Académie des Sciences*, has been

published *in extenso*, by M. Legrand du Saulle, in the *Gazette des Hôpitaux.* Nov. 3, 1857.

The second case we have to mention is not less interesting. A man had been wounded in the head at Sebastopol; a part of the skin and of the external table of the frontal bone had been taken away by a ball. Six months after, the patient had attacks of vertigo, and the next day real fits of epilepsy: the wound had not cicatrized. Trepanation was performed, and a piece of broken bone which irritated the dura-mater was extirpated. Since the operation there has been no more fits, and the patient now, ten months since he has been trepanned, is quite well. We have tried to show, concerning cases of this kind, that it is not the pressure on the brain, but a peculiar kind of irritation starting from the centripetal nerves of either the skin or the dura-mater, which causes epilepsy, by a reflux action on the blood-vessels of the encephalon. We will refer to our work on epilepsy for explanations on this subject, pointing out particularly our remarks upon an important case that we owe to the kindness of Prof. Van Buren.

Of the third case, we will say merely, that it is a case of abscess of the skin of the head, which had produced epileptiform convulsions, and that the convulsions were cured when the inflammation of the skin was cured. Bouchut is the physician who treated the case.

12. *Preservation of vaccine matter.*—In France this matter is sent to every physician who asks for it by a committee of the Academy of Medicine. The vaccine is preserved between two glass plates or in capillary glass tubes. M. Depaul, in a report to the Academy, remarks that this substance frequently loses its properties when it is placed between glass plates. Mr. Trousseau says that more than four times out of five he has failed in trying to vaccinate when he employed the substance kept between plates. He also asserts that capillary tubes, from which air is secluded, always preserves vaccine matter powerful for years, while if there is air with the matter it putrefies and loses its properties.

13. *Danger of carbonic acid used as an anæsthetic.*—It is well known that lately Prof. Simpson of Edinburgh, and afterward M. Follin of Paris, have reintroduced the practice of using carbonic acid as an anæsthetic. It is particularly in painful affections of the uterus that this substance has been employed. Whatever be its mode of action, which we believe to be at first a temporary stoppage of circulation in consequence of a contraction of the blood-vessels and of the agglutination of the blood-corpuscules; it truly diminishes pain for a time, but there is danger in employing it for a long while, as M. Charles Bernard has recently shown. The carbonic acid is absorbed and it produces symptoms of asphyxia, vertigo, headache, nausea, an undefined feeling of pain and weakness, etc. It is necessary, therefore, not to make use of this gas too long and in too large quantities.

SURGERY.

1. *Thoracentesis.*—French surgeons, except a few of them, are very much afraid of certain operations. Many would let a man die rather

than open the chest, whatever may be the circumstances. There are some, however, who do not hesitate to open the chest whenever they think it may prove useful to do so. Among these surgeons, considered here as very bold, we may name Sedillot, Jules Guérin, Boinet, Trousseau, etc. The number of successful operations is now sufficient to prove that the operation is quite a legitimate one. Prof. Trousseau, who recently has performed thoracentesis three times, and successfully in two of these cases, gives at length the details of the case of a man who was in as miserable a condition as possible, and who nevertheless bore the operation very well, became better after it, and lived six weeks, although he was consumptive. In America, where Dr. H. I. Bowditch and others have so often practised thoracentesis, this case will not surprise anybody; but here many persons have blamed what they call the boldness of Prof. Trousseau. In a recent communication to the Academy of Sciences, M. Sedillot has proposed some views which he considers as new and important concerning thoracentesis. In the first place he declares that the entrance of air in the chest becomes impossible, if, instead of operating *between* two ribs, the opening be made *through* a rib. He places in the opening a silver canula or india-rubber catheter. As a second rule he recommends not to withdraw the whole of the liquid (pus or serosity) effused in the pleural cavity, and if, accidentally, too great a quantity of liquid flows out, he thinks necessary to replace by an injection the same amount of fluid in the chest. The danger of the operation consists mainly, according to him, in the rupture of the pseudo-membranes and the consecutive inflammation from this cause, when too great a quantity of liquid is withdrawn at once. This idea is not so new as Prof. Sedillot imagines; it is pretty well known in America; and here, M. Boinet has grounded upon it the same mode of doing now proposed by M. Sedillot, *i. e.* to take out but a small quantity of the effusion at a time. Two cases only are mentioned by this able surgeon, in one of which the patient was completely cured, and the other lived a year, although he was in the worst circumstances.

2. *Case of fracture of the jaw in extracting a tooth.*—This is a curious case, showing the danger of persisting in efforts of extraction when the patient moves. The lower jaw was broken all along the alveolar canal so that seven teeth, of which six were healthy, were lost for the patient, together with the part of the jaw on which they were fixed. M. Désirabode, who saw the patient after the accident, states rightly that it would not have occurred had the dentist ceased to try to continue the operation at a time when the patient was throwing himself on the floor to avoid its performance.

3. *Catheterism of the urethra accomplished by Mr. Phillips, in a case in which Prof. Nélaton had failed.*—This case deserves attention in many respects, so that we will give a full account of it. A man, forty-two years old, had had blenhorrhagia several times when young, and for several years he had difficulty in expelling urine. He had frequent inclinations to expel water and could not succeed in emptying his bladder. When he was admitted in Nélaton's wards at the *Hôpital des*

Cliniques he could not expel more than drops of urine, and he suffered much at every time he made efforts to urinate. The general health of the patient had become much altered: he was cachectic. Prof. Nélaton vainly tried to pass a sound into the bladder. The house physician tried also a great many times, and for half an hour each time, and he also failed. Almost all kinds of attempts were made without success. Prof. Nélaton spoke of the case to M. Phillips, who said that he had the same opinion as Syme, of Edinburgh, and that he had never seen an inflammatory stricture through which a sound could not be passed. Besides, he thought, that as there was still an emission of drops of urine in the case mentioned, to him there was possibility of passing a catheter if a *convenient* one were employed. The next day M. Phillips saw the patient, and for two hours unsuccessful attempts were made.

The patient was placed on his feet against a wall and the surgeon tried to introduce the sound without drawing much on the penis, and without exerting any pressure able to cause the least hæmorrhage. The first instruments employed were *whale bougies*, No. 3, very fine at their point. Two strictures were passed, but a third stopped the instrument. During the last hour the patient was almost constantly in a syncopal state, and at last his syncope became so intense that any further attempt was postponed to another day. He felt better the whole day, and slept well, and had but a slight shivering in the evening. Two days after this attempt a second was made by M. Phillips, and this time it proved successful. The bougie was fixed in the canal and left there for three days. After this time the catheterism became relatively easy. M. Phillips had ascertained that there was a passage only on the superior and left part of the stricture, and by directing the point of the instrument towards this part he succeeded without great difficulty in introducing larger and larger bougies. He at last passed one as large as a goose quill. He nevertheless thought that the method of simple and gradual dilatation would not be enough to cure completely, and resolved upon dividing the strictures with the *urethrotome* of Charrière. The incisions were made at three different times, with five or six days of interval. The patient suffered but little, and the hæmorrhage, which was not considerable, stopped spontaneously. In a few weeks, the patient was able to sound himself with a large catheter, and he went out of the hospital perfectly cured.

M. Phillips attributes his constant successes to the use of *whale bougies*, which alone can preserve the form given to their point. M. Chairon, who has published the case in the *Gazette Médicale*, remarks that there has been here a cause of success which deserves attention: it is the syncopal condition of the patient. But he believes that it is the absence of blood, which he considers as a consequence of the syncope, which allows the passage of the sound. The truth very likely is, that the spasmodic contraction of the muscular elements of the urethra ceases in syncope, as it does when chloroform is inhaled by the patient.

4. *Pressure and rubbing in cases of sprain.*—In a paper presented

to the Academy of Sciences, M. Girard remarks that sprains are more dangerous than physicians imagine. He cites M. Baudens, who states that in a number of seventy-eight amputations of the leg or of the foot, sixty have had for their first cause a sprain, eighteen only being independent of this cause. This statistical document is sufficient to show the necessity of finding a good means of treatment of sprains. M. Girard relates three cases, to show the great importance of some empirical means of treatment employed with success, in many parts of France, by ignorant men. The first case is that of an officer who fell from horseback, and violently sprained the ankle of his right foot. The pain was acute, the foot swollen, and ecchymoses quickly appeared on the two sides of the joint. A person entirely ignorant of medicine and surgery began then to apply pressure and other mechanical irritation to the part, and after half an hour the swelling had diminished ; the skin had become almost normal. After two hours of frictions and tractions in every direction, the patient could walk, and in two or three days he was quite cured.

The second case reported by M. Girard, is that of a military man who fell on a staircase, violently turning his left foot, and spraining it very much. When M. G. saw him, two or three hours after the accident, he was in his bed, suffering extremely. The foot was much swollen, and ecchymoses had begun to appear. The least touch increased the pain, so that M. G. at first employed very slight frictions, and gradually pressed more and more over the foot. After having made use of these means for about three hours, the swelling and the pain had disappeared. The next day the patient was up, and since then, he has not had any trouble from his foot.

In the third case, the accident had occurred six weeks before the treatment. The foot was swollen; it had a yellowish tint, and the least touch was painful. M. G. employed pressure and rubbing for three hours, after which time any pressure could be made on the foot almost without causing pain. The patient was then told to walk, which he did with but little pain. During eight days, shampooing was applied two hours each time, and he was cured.

M. G. employed merely pressure and friction, and not at all traction, as common people do in France. Nélaton had already spoken of these means as being worthy of attention. He says : "It seems certain, according to what is stated by physicians in whom we may be confident and who have seen cases of cure, that there are real and remarkable successes."

We would not have taken notice of these facts, if, on one side, M. Girard was not a very respectable physician, and, on another side, if we had not known ourselves that there is a great deal of truth in the popular faith that some common men cure sprains better and quicker than learned doctors, and by the means above mentioned.

SYPHILIZATION.

1. *On the extinction of syphilis by inoculation of the chancrous virus.*—This is the title of a new paper of M. Sperino, of Turin, who has been

the first to accept the principal parts of the theory of Auzias Turenne. In 1851, M. S. had already announced that having inoculated many times the chancrous virus, he had ascertained, besides the correctness of the principles of syphilization, this other fact, still more important, that the symptoms of constitutional syphilis disappear by syphilization, without any other treatment. In 1853 and 1854, M. S. published many cases of cure of syphilis by repeated inoculations of chancre. M. Boeck, of Christiania, has published in 1854, 55, 56 and 57, many similar cases. Stoenberg, of Stockholm, has also published three such cases. Prof. Sigmund, of Vienna, has announced that he also had seen facts, proving the exactitude of M. Sperino. This celebrated Italian physician states that it is now proved :

1st. That syphilization gives safety as regards the syphilitic virus.

2d. That syphilization causes the disposition of the accidents of constitutional syphilis.

3d. That it ameliorates the general health of the persons submitted to this kind of treatment.

The great question to be solved is this : Is the syphilitic diathesis completely and for ever cured by syphilization.

After the use of mercury or iodide of potassium, it is not rare to see the symptoms reappear after they had completely ceased in appearance. Is it so after syphilization ? Besides, is not the organism disturbed after syphilization ? and is there no danger for children of people who have been submitted to syphilization ? etc.

To these questions M. Sperino answers :

1st. That it seems quite natural to admit the radical extinction of syphilis by syphilization, when we think that a small amount of virus creates symptoms, constantly increasing, if there is no treatment, while after the inoculation of a vast amount of virus, there is a constant decrease of the symptoms until they have completely disappeared. It has been so in more than 200 persons.

2d. There are many individuals in whom a perfect cure now persists for five, six, or seven years, and if some persons have been attacked again, it is that syphilization has not been carried far enough, or that the inoculations have been too frequent at once, or that a mercurial treatment had been used. But when new inoculations have been made, cure has been obtained.

3d. The general health after syphilization is as flourishing as possible.

4th. Constitutional syphilis, much advanced, and even a state of syphilitic cachexia, complicated with favus, has been completely cured in two women, and favus also has been cured, by syphilization alone, which is very likely the consequence of the general health having become good.

5th. A woman cured by syphilization in 1852 had a boy in good health, but unfortunately she abandoned her child and it has been impossible for M. S. to find him in the Foundling Hospital.

6th. Syphilization cures not only syphilis in adults but in children, as Mr. Boeck has shown. Out of nine children cured by M. S., three had hereditary syphilis, which had reappeared after treatment by mercury.

7th. In two girls, æt. 13 and 21, who had taken syphilis while nursing, a dreadful state of cachexia existed, which ceased in one of them after three months, and in the other after two months and a half of syphilitic inoculations. .Their health became flourishing, and regular menstruation came in the eldest.

8th. Syphilization in a case has had a very favorable influence on the production of milk in a nursery woman.

I will refer those who wish for more details, to the paper of M. Sperino, which is in the *Gazette Médicale de Paris*, 1857, p. 656.

MIDWIFERY.

1. *Application of forceps with introduction of only one hand.*—M. Felix Hakin has sent a second paper to the Academy of Medicine, on this subject. M. H. maintains that there is no cause of difficulty arising from the introduction of the whole hand into the vagina, and he insists upon the many advantages of doing so. In the usual mode of introduction of forceps, it is with the fingers of the right hand, in the interior of the vagina, that the left handle of the forceps is led, while the fingers of the left hand lead the right handle of the instrument. According to the method of M. Hakin, after having placed one of the handles of the instrument, with one on the other hand, *ad libitum*, this hand is then entirely introduced, and upon and by it the other handle of the forceps is directed, after which it becomes easier to unite the two handles than in the old method. Usually M. H. introduces the left hand.

TOXICOLOGY.

1. *Research on arsenic.*—M. Blondlot, of Nancy, the able physiologist and chemist, wrote, some time ago, a paper to prove : 1st. That putrefaction of animal matters containing arsenious acid is a cause of formation of sulphide of arsenic, and that the carbonization of tissues with sulphuric acid also is a cause of formation of this sulphide, and therefore, of a loss of arsenic which remains with the carbon and is lost. 2d. That, to avoid this loss, the carbonized matters must be washed with ammoniacal water, which dissolves the sulphide of arsenic. The liquor must be distilled and the dried matter treated, at a high temperature, with nitric acid, which transforms the sulphide into sulphuric and soluble arsenic acids.

Mr. Barby Delisle, writes on this subject, that M. Blondlot is right for the cases where carbonization is obtained by sulphuric acid, but that it is simpler to make use of nitric acid, for carbonization as it has been proposed years ago by the committee of the Academy of Sciences.

INFANTILE PATHOLOGY AND THERAPEUTICS.

Report on the Progress of Infantile Pathology and Therapeutics; prepared for the NEW YORK JOURNAL OF MEDICINE. By A. JACOBI, M.D., New York.

1. *Poisoning by rad. conii maculati.*—Two girls of from seven to eight years of age, mistaken by its similarity to the root of erodium cicutarium, took a large quantity of hemlock-root. Medical attendance was called for on the next day. *Status præsens*: constant restlessness, furious delirium, interrupted sometimes by exclamations of pain (always in the vowels *a* and *o*); pupils much dilated, sight apparently injured, hallucinations, frequent convulsions of the facial muscles, giving the countenance a frightful expression; frequent contractions of all the other muscles, particularly the spinal extensors and the flexors of the extremities; and a peculiar motion of the thumb and index, like the winding a ball of thread. Tongue red, speckled, abdomen soft, bowels not moved, urine freely passed. The cause of these symptoms was brought to light, but at a later period; it being unknown, electricity was applied, without any success; afterwards leeches to the processus mastoideus, injections, wine and beef tea. After copious vomiting and evacuation of the bowels, both of the children improved, with the exception of their walk, which remained staggering for a while.—*Gazetta Lombarda*, 1857. *Oesterreichische Zeitschrift für Kinderheilkunde*, Sept. 1857, p. 598.

2. *Poisoning by laudanum*—A child of three weeks of age, because of restlessness, had three injections, with about thirty-five (!) drops of laudanum each, given to him. Shortly afterwards severe symptoms of poisoning made their appearance. The treatment consisted of derivating poultices upon the feet, and injections of coffee, with two drops; later one drop, of Prussic acid, each. The child got well. Blanc, in *Revue de Thérapeutique Medico-Chirurgicale*, 1857, No. 17, p. 452.

3. *Spirits of turpentine in trismus nascentium.*—H. L. Byrd reports to have seen over thirty cases of trismus nascentium (or better neonatorum), all of which terminated fatally, with the solitary exception of the one treated by the spirits of turpentine. He was induced to try this remedy from Mott's and Hutchinson's success in the cure, by the same remedy, of tetanus traumaticus. The treatment consisted of injections of inf. lini ℥ij., spirits of turp. gtt. x., spir. nitr. dulc. gtt. v., ol. ric. ʒj. At the same time Dr. Byrd refers to two cases of trism. nasc., successfully treated by Gaillard and De Saussure, with *cannabis indica.*—*Charleston Medical Journal and Review*, July, 1857, p. 474.

4. *Musk in spasmus glottidis.*—Salathée asserts that he has cured twenty-two cases of spasmus glottidis out of twenty-four, by very small doses of musk, of which he prescribes $\frac{1}{12}$ or $\frac{1}{20}$ of a grain several times a day.—*Revue de Thérapeutique Médico-Chirurgicale*, 1857, No. 3.

5. *Herniotomy in a child seven weeks old.*—This operation is reported to have been performed by William Rayner, because of a stran-

gulated irreducible inguinal hernia of the right side, with stercoraceous vomiting. The operation was successful.—*London Lancet*, 1857.

6. *Recoveries and deaths after tracheotomy.*—André publishes a report on fifty-four cases of tracheotomy, performed by him. There were 15 recoveries, 39 deaths. No recovery took place in children of less than two years of age. His better success with older children is attributed by him to their greater resistance to hemorrhage, traumatic fever, diphtheritis, capillary bronchitis, and pneumonia, and to their greater docility.—*Bullétin de Thérapeutique*, tome lii., p. 471.

7. *The possibility of again suckling infants after weaning them* has been the object of a discussion in the "*Société Médico-Pratique*," at Paris. Mayer reported the case of a child ten months old, and weaned at seven months of age, which, to save from death by diarrhœa, required to have breast-milk again. The child began to suck pretty soon. A similar case was reported of a child of thirteen months of age, weaned six months before. Perrin has the case of a patient who ceased nursing her child in consequence of a mammary abscess, but had milk enough, four months later, to nurse her child.—*Revue de Thérapeutique Médico-Chirurgicale*, 1857, No. 14, p. 376.

8. *Chloride of sodium and cow's milk.*—Dr. Kuettner, of Prague, and Dr. Gumprecht, of Hamburg, mix cow's milk with the chloride of sodium, in order to make milk more digestible for both healthy and sick children, and for adults. The chloride of sodium increases the action of the digestive organs, and renders albuminous matters, and, probably, fatty matters also, more soluble. Thus acidity, flatulency, colic, diarrhœa, may be avoided. Water and milksugar alone, when added to cow's milk, have only an imperfect success.—*Journal für Kinderkrankheiten*, May and June, 1856, March and April, 1857, p. 161.

9. *A case of suppurative inflammation of the uterus, kidneys, and bladder of a newborn child.*—This case is reported by Dr. Thomas Hall, and described as "Congenital Non-secretion of Urine." A child, apparently well developed, passed no water; some thick mucus was driven through the catheter; a tumor was to be felt above the symphysis, extending half an inch above the umbilicus. The child died on the sixth day after birth. *Post-mortem Examination:* The small intestines were united, by firm bands, to the parietes of the abdomen; the peritoneum of the bladder and iliac region highly inflamed; uterus inflamed, containing pus and mucus; bladder inflamed; mucous membrane gone, but an ounce of pus in the cavity; kidneys inflamed, containing some pus.—*Northwestern Medical and Surgical Journal*, August, 1857, p. 346.

10. *A rare instance of the healing power in the infantile body.*—This case is reported by Bitot in the *Journal de Bordeaux*, 1857. A child, eight years old, was hurt by a carpenter's chisel, on the dorsal side of the joint of the third phalanx of the left fourth finger, the hand lying on a table. Dr. Bitot found the third phalanx attached to the second one by nothing except a filiform pedicle. The joint was opened throughout, the cartilages perfectly intact. After having stopped the

bleeding from the arteries, he brought the third phalanx to its place, and fastened it by two strips of plaster ; over this a circular bandage was laid round the index and the third finger, which served, thereby, instead of a splint. The hand was put on a splint and laid in an elevated posture, the child placed in bed, and the utmost attention bestowed on it both day and night. On the third day, the touch of a pin was felt on some parts of the third phalanx, but cicatrization went on very slowly, the bandages being wet every day with a fluid which, when dried, proved stiff and reddish. The tissue of the cicatrice was soft, greyish, of an apparently loose cohesion in itself, and constantly transuding a serous fluid. A perfect solidification of the new-formed tissue, checked by the extraordinary secretion of synovia, took place after more than two months, with the frequent use of a solution of tannic acid. It was some time before the third phalanx recovered its normal motion and sensibility.—*Oesterreichische Zeitschrift für Kinderheilkunde*, Sept., 1857, p. 599.

11. *Rachitis acuta.*—The character of diseases is known to differ very much according to their being either acute or chronic. That such is the case with acute and chronic pleuritis, peritonitis, hydrocephalus, none need to be told ; that the same difference may be found with rachitis, Prof. Mauthner, of Vienna, proved by facts.

A boy, nine months old, fat, with light hair, was brought to the St. Annen Hospital, at Vienna, on the 9th of March, 1857, with the physical signs of a light catarrhal pneumonia of the left side, and of intestinal catarrh. He was said to have been sick for three weeks, and to have been weaned at six months of age. The child did not cease screaming frightfully, more so when carried around than while laying in bed. There was always an expression of pain in the countenance, the lower extremities were drawn towards the abdomen, their abduction and extension being followed by an agonizing pain. After five days and nights had elapsed with constant screaming, a flat, hard swelling was perceived on the right thigh, which was all the time kept in close adduction towards the abdomen, but no alteration in the skin. This swelling was considered to originate from the periosteum, and the upper part of the thigh being flexible, the case was considered to be one of fractured thigh, with callous exudation ; the fracture being effected, probably, by some fault of the nurse's. But on the following day the tibiæ and fibulæ of both sides were found to be bent, the swelling not being so large as on the thigh. The child did not move by himself, but was several times attacked with convulsions. The left humerus was also bent, all the curvatures increased, the cranium became soft and flexible. It was now evident that the cause of all this was to be looked for in a general periosteal disease The next day the child died. The corpse looked as if broken upon the wheel, the majority of the diaphyses were bent, porous, hyperæmic, the medullary cavity dilated, the marrow reddish yellow, the periosteum thickened, loosely attached to the bone, the adjacent muscles pale, flaccid, and had, in the right femur, where the process had begun and progressed very rapidly, undergone a uniform fatty degeneration.

The next two cases described are of a similar kind ; but the post-mortem examination of the last one, that of a girl of eleven months of age, is too instructive to be omitted. Muscles atrophied everywhere, pale, thin, fatty ; joints flabby ; cranium thin, anæmic ; both of the collar bones bent in the shape of an S ; sternum cartilaginous ; on both sides of it, about three centimetres from its longitudinal median line, from the third to the seventh ribs, deep cavities are visible, beginning on the cartilages, and reaching as far as the osseous parts of the ribs ; corresponding to these cavities, which were two centimetres deep, there were found, inside, sharp prominences of the said five ribs, the periosteum being easily removed from the epiphyses ; epiphyses porous, hyperæmic, tender ; cavities on the outside of the lungs corresponding to the curvatures of the ribs ; the pulmonary tissue atrophied, smooth, flabby ; pleura thickened and discolored ; heart situated behind the sternum ; parietes of the right ventricle very thin, a little coagulated fibrine inside ; liver tough, grey like slate, its serous membrane thickened ; spleen hard, brown ; stomach pale, flabby, its membranes almost white ; containing a thin, whitish fluid ; transverse colon expanded by gas, in the jejunum three invaginations of some inches each ; all the intestines containing thin fæces ; follicles grey ; valvula Bauhini and Peyer's glands swelled ; pancreas dry, dense, of a coarse structure ; kidneys bulky, hyperæmic ; brain pale ; more serum than is usually found in the ventricles and on the basis ; left humerus, being only ten centimetres in length, was bent to a right angle, somewhat flexible ; the osseous substance succulent, tender ; diploë with large cellules, like meshes ; cortical substance almost gone ; medullary cavity dilated ; epiphyses *not swollen at all* ; radius and ulna of equal size on both sides, both of them bent in the diaphyses, their substance cartilaginous ; the same condition to be found in the right humerus and leg, where the fibula had given way in the direction of the tibia.

Rickety degeneration of the osseous system is known to be preceded by anomalies of digestion. The grey color of the liver, the swelling of the intestinal glands, the paleness and flabbiness of the stomach, are but signs of abdominal sufferings. Prodromal symptoms like these are rarely appreciated properly, because the children look fat and round. But it ought not to be overlooked, that, but too frequently, accumulation of fat is but a proof of anomalous assimilation ; the food not reaching a sufficient degree of animalization. About as slowly as this prodromal stage, the alterations in the osseous system progress, as for instance the swellings and deformities of the epiphyses, the ceasing of longitudinal growth, the tenderness and curvatures of bones. The possibility, however, of an *acute* disease of the osseous system following the chronic prodromi, has been proved, particularly, by the first-mentioned case.

When osseous matter is no more being deposited in the osseous tissue, fat begins to predominate in its cellules. Real fatty degeneration occurs as well here as in the surrounding muscles. Nothing, therefore, is more natural than frequent fractures of the weak and flexible bones. The periosteal swellings are to be considered as so many beginnings of formation of a solid callus.

All the cases reported by Prof. Mauthner are of children less than a year old, badly fed and born of very poor and badly developed mothers. Acute rachitis, therefore, seems to be inborn; perhaps hereditary syphilis will be found in some cases, to be the next cause; one thing cannot be denied, viz., that the acuteness of rachitis depends much on unfavorable circumstances, as to food, residence, etc. There are some remarkable differences between chronic and acute rachitis; in the first one children show, sometimes, some uneasiness and uncomfortableness, especially on locomotion, but never do we meet such agonizing pain in the acute form of the disease. Chronic rachitis affects, particularly, the epiphyses; acute, the diaphyses. Chronic rachitis never terminates by the mollification of the osseous system, described as the last stage of the acute one; but eburneation being the usual favorable result of the chronic form, may possibly be found, in future observations, terminating acute rachitis.—*Oesterreichische Zeitschrift für Kinderheilkunde*, Aug., 1857, p. 513.

CORRESPONDENCE.

Condensed milk.—We have received from Dr. E. H. JANES, secretary of the section on Materia Medica, the following synopsis of the report of that section to the Academy of Medicine on the subject of *Condensed Milk:*

A few months since some specimens of "condensed milk" prepared by Gail Borden, Jr., etc., were presented to the Academy of Medicine for approval and referred by that body to the section on Materia Medica and Botany for examination and report. The section proceeded at once to examine the specimens furnished them for the purpose of ascertaining the purity and quality of the preparation when compared with that of ordinary milk, and found the result thus far perfectly satisfactory. They next proceeded to acquaint themselves with the mode of preparation, carefully inspected the whole process from the milking of the cows to its final completion; carefully noted the temperature to which the milk was subjected, extent of vacuum, amount of evaporation, and all other points of interest connected with the subject, and as far as possible tested the value of the "condensed milk" in an alimentary, therapeutical and economical point of view, after which they reported at length to the Academy the result of their investigations.

The following are some of the more prominent points contained in this report. Pure milk consists of water, butter, casein, milk sugar, phosphates of lime, magnesia, and iron, chlorides of potassium and sodium, soda and sulphur. These comprise all the elements of nutrition combined in such proportions as to be best adapted to the wants of the young animal, and milk being the only article furnished by nature in which such a combination exists, its importance is at once established as an article of diet for young children, and hence its universal employment under all circumstances of life from infancy to old age, both in sickness and health, in savage as well as civilized society.

Its absolute importance as an article of diet, and the consequently increasing demand for its supply, especially in large cities, offers strong inducements for those dealers who are influenced entirely by motives of cupidity, to furnish their patrons with milk adulterated in such a manner as to render it not only inferior in its nutritive qualities, but absolutely injurious, often generating disease and death, especially among young children whose diet consists mostly of this wretched compound, sold under the *sobriquet* of "pure country milk." So great is the extent of this evil, that any attempt to remedy it deserves the hearty support of the public and the cheerful coöperation of every practitioner. This enterprise Mr. Borden has undertaken, and succeeded in a manner both simple and scientific. His modus operandi consists in going far back in the country where milk can be obtained at a price much cheaper than is paid by the milk dealers. The milk, immediately after leaving the cow, is deprived of its animal heat, and then as soon as possible raised to a temperature of 175° Fahrenheit, which causes a slight deposit of a viscid albuminous substance upon the sides of the can; it is now strained, and without delay passed into a vacuum pan, where, at a temperature of about 125° Fahrenheit, it is evaporated to about one-fourth the original volume, leaving the milk with all its nutritive portion perfect, minus the greater portion of its water.

The milk thus condensed is easily transported, and may be kept without decomposition for weeks and months, and if hermetically sealed, will remain sweet for years. It is used on board Collins' steamships and goes to Europe and back without injury. It imparts a delicious flavor to coffee, fully equal to that of rich cream; without eggs it makes as good ice-cream as can be obtained anywhere in this city, and with half the usual quantity of eggs and sugar, it affords the most delicious custard. As an article of diet for young children in the absence of pure new milk it will possess a value far beyond calculation. The report concluded by assuring the Academy that the section believed the article to be nothing but pure milk deprived of most of its water; that it was the best possible substitute for pure new milk that could be obtained in this or any other city; equally adapted to all conditions of life, and often a valuable auxiliary to the physician either in private or hospital practice, and as such the section would earnestly recommend it to the favorable notice of the Academy.

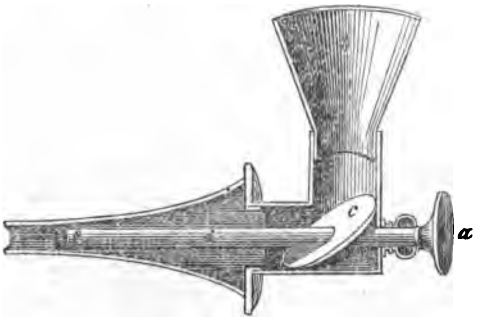
Physical exploration of the ear, by means of the auriscope.—By G. GRANT, M.D., of Newark, N. J.—Perhaps one of the more important reasons why aural surgery has been a field of imposture as well as reproach to our art, has been the embarrassment which practitioners have felt, and the obstacles which they have met in examining satisfactorily the meatus externus as well as the membrana tympani. If there were a careful and complete examination in every instance, there would be but few cases either abandoned as hopeless, or given over to the hope of a spontaneous recovery, often when the nature of the disease imperatively demands surgical interference.

The most common forms of deafness may be taken to illustrate this. It is true, deafness analogous to amaurosis may exist in consequence of a lesion of the nervous system, either of the auditory nerve itself in its expansion in the labyrinth, or some other nerve in connection with the organ; but how often is the term nervous deafness employed in cases where a careful examination would have shown the disease to be the result not of any disorder of the nerves, but of the mechanical part of the apparatus !

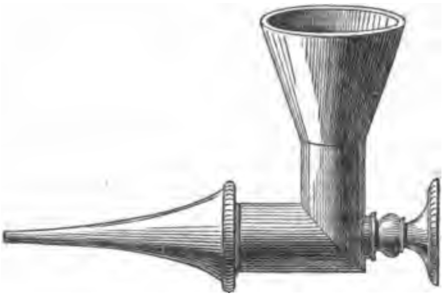
A physician hardly ever deems it worth while to interfere in congenital deafness, and yet a large number of these cases arise from accumulations at birth of slimy caseous matter, which, suffered to remain, hardens, obstructs the canal, causes deafness ; and this is pronounced incurable, while an examination would lead to discovery and removal. But if neglected, the auditory nerve, never receiving its proper stimulus, loses its excitability, rendering the patient at last really a victim to incurable deafness. In like manner, scarlatina, small pox and measles, or any of the diseases which involve the pharynx, accompanied as they are by inflammation, which travels up the eustachian tube, and attacking the lining structures of the tympanal chamber and mastoid cells, are, by suppuration and bursting of the membrana tympani, the cause of deafness. Though the loss of the membrana tympani may be supplied by artificial means, still such cases may be very much ameliorated or prevented altogether by proper anticipatory treatment which an examination would suggest.

The idea of an auriscope was first mentioned by Mr. Clelland, an English surgeon (vide Essay on the deaf and dumb, by J. H. Curtis), but its invention really belongs to Dr. Grüber, of Vienna. It has since been modified by Hutchinson, with whose instrument the readers of this Journal are acquainted.

Having had frequent occasion to used Hutchinson's instrument, I became aware of some great disadvantages. In the first place, it is illumined by artificial light, and that by a very small candle, which, as it burns out, is very difficult to keep in the proper focus. Secondly, a very slight draft of air causes the flame to flicker. Thirdly, the artificial light causes an exaggeration and a discoloration of the parts viewed, so that little globules of cerumen appear as little balls of fire. Another objection is the bulk of the instrument. These difficulties I propose to obviate, by using solar light as an illuminating means, and, if this is impossible, artificial light, at such a distance, and of such intensity, as best adapted.



The instrument thus modified, consists of a concavo-convex funnel (fig., *b*.), in which the solar rays are collected, and thrown upon the mirror *c*, placed at an angle of 45°. From this mirror, the rays are thrown at right angles directly upon the membrana tympani, the instrument having been previously placed and adjusted in the external ear. The membrana tympani is thus fully illuminated as well as the adjacent parts, in proportion as the meatal or terminal tube is more or less removed from the tympanum. The tube (*a*, *d*, *e*), passing directly through the mirror *c*, and armed at *e* with a powerful lens, serves to carry the objects illuminated to the observer's eye at *a*. The funnel, as well as the meatal cone, is lined with silver, feebly polished. The tube, *a*, *d*, *e*, can be adjusted to any focus suitable to the observer's eye, or entirely removed for insertion of a new lens, etc., etc. The mirror *c* is made of steel, highly polished. The whole instrument may be made of any material, taking care that the mirror and reflecting surfaces shall be as described.



The advantages of this instrument, thus modified, are briefly as follows : 1. It may be used with *solar* and artificial light. 2. The intensity of the light may be modified to any degree necessary. 3. It is less bulky and more simple. 4. It is cheaper ; it may be made by any skillful mechanic, at a comparatively small cost. Notwithstanding it is adapted to artificial light, it is intended to be used chiefly with solar light ; thus a great advantage is secured, inasmuch as solar light presents objects illuminated by it without discoloration or exaggeration, and with extreme clearness.

The feeling, that whatever may lead to any improved mode of examining the ear, will be regarded as important ; and the hope that this instrument, thus modified, will be found as useful to the profession as it has been to me, has induced me to lay this brief description before the readers of the Journal.

On the feasibility of retaining the figure erect in ulceration of the bodies of the vertebræ.—By Henry G. Davis, M.D., Member of the Mass. Med. Soc., etc.—It has been a generally received opinion in the profession, that little or nothing could be done in Pott's disease to prevent deformity, and that the only mode of cure was to allow the bodies of the vertebræ, adjoining that diseased, to come together and unite by anchylosis ; consequently it has been supposed, that if the parts were kept asunder by mechanical appliances, the cavity would not be filled by bone, or other material answering its purpose in sustaining the spinal column.

This settled conviction has been almost an effectual bar to all efforts in the direction towards that mode of treatment, which I have found efficacious, and in which I have the fullest confidence. There remains not a doubt, in my mind, that if the cavity resulting from diseased vertebræ were kept open, so that a deposit of bone *could* take place, and thus afford the requisite support, all *ordinary* cases would recover with a good figure. Authors even, who deny this, furnish data from which it can be reasonably inferred that such a result would follow. Sir Benjamin Brodie says, "in the advanced stage of the disease, new bone is often deposited in irregular masses on the surface of the bodies of the neighboring vertebræ." The vertebræ heretofore have not been found, (when united), in their natural positions, *because* the weight of the superimposed trunk, together with the action of the muscles, has served to tilt the vertebræ upon the oblique processes, thus approximating the bodies of the adjoining healthy vertebræ. In addition to the weight of the body and the action of the muscles anterior to the spinal column as a cause of deformity, the disease of the bone appears to impair the ability to counteract this tendency by the use of the antagonizing muscles : the patient seems to lose in a measure the connection between the brain and the muscles, somewhat in the same manner as in diseased joints and fractured limbs.

From the admissions of Sir Benjamin Brodie and others, and from our own knowledge of the efforts of nature to repair the injury in cases of diseased bone in other portions of the system, it cannot be unphilosophical to conclude, that if the cavity formerly occupied by the body of the vertebræ were kept open, bone would be deposited in sufficient quantity and in such manner as to afford perfect support to the spinal column.

As has been remarked in another paper, I have never been able to demonstrate the truth of this supposition by an autopsy, when the person had been under my treatment and recovered from the disease, with a good figure. There has recently occurred the death of a little boy in Toronto, Canada, who was under my care two years since, and recovered with a good figure. I am anxious to hear whether his spine was examined.

There are many now living in various parts of the country, who have been treated by the application of my apparatus, and with more or less success in retaining the form erect; some, who at the present time have a figure without deformity, and who have not worn any apparatus for years, thus demonstrating beyond cavil, that the lost portions have been replaced by some material that fulfills all the indications of bone.

There is at the present time, in my house, a little girl recovering with a good figure, who has been unable to sustain her weight upon her feet, or sit without leaning upon her arm. Another case, a son of S. S. Randall, Esq., superintendent of the public schools of this city, came under my care on the 28th Nov. 1856, with Pott's disease of one of the lower dorsal vertebræ, with one abcess opening in the groin, and another upon the back, just above the superior portion of the pelvis. His general health was very much impaired; he was able to walk but a short distance, and that by the aid of a cane. Since early summer he can walk miles, his health and appetite are good, and his figure erect. His state at first was such, that his parents despaired of his receiving any benefit from my mode of treatment.

The treatment of deformities has been a subject of special attention with me for the last fifteen years, during which time there have been under my care some hundreds of cases of Pott's disease, and my conclusions are based upon the results of these cases, rather than upon the opinions of others: their treatment never placed the parts or retained them in their normal positions so that a cure *could* take place *without* deformity; therefore, their opinions as to what *would* be the result under the conditions in which the parts are placed by the application and use of an apparatus are not conclusive. Had the parts been kept asunder, and bone or other substance not been deposited so as to sustain the spinal column, then their conclusions would have been correct. If I can convince the profession, that where the body of a vertebra is destroyed by ulceration, the cavity will be filled with bone, or some material fulfilling its indications, if the parts are kept in their normal position, then the foundation will be laid to induce them to examine modes of treatment which in my hands have been effectual in retaining a good figure, or in other words, preventing the usual deformity from the disease.

The accompanying outlines of the spine show the change wrought by the use of my apparatus in a comparatively short period.

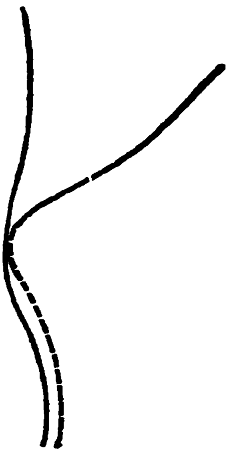


Fig. 1.

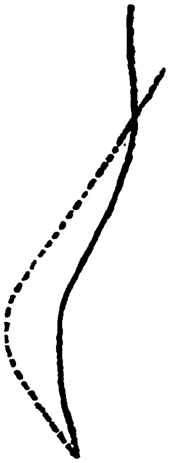


Fig. 2.

The dotted line gives the position of the spine of Wilbur Fisk Wood, son of Samuel S. Wood, of Rochester, N. Y., before the application of my apparatus. The disease, which was in the dorsal vertebræ, was of four years' standing, and deformity observable for three years. The continuous line shows the change produced by treatment, in twenty days. His health improved as rapidly.

The second case was that of Richard Graves, Jr., of Kinderhook, N. Y., aged 15 years. He has had Pott's disease of lumbar vertebræ for three years, producing partial paralysis of the lower extremities. The cut shows the change wrought in four weeks.

A case in which the deformities left after an operation for double harelip, and fissured alveolus were remedied by dental appliances. [With illustrations.] By Wm. Dalrymple, D.D.S., of New York.—The patient was a very interesting girl of thirteen years of age, who had been operated upon in infancy, for double harelip. But the operation had only partially relieved the deformity. A large portion of the alveolus, with the germs of the deciduous incisor teeth, were removed by the operation, and at the time I saw her, there was nothing left between the canines but two elemental portions of teeth which I subsequently removed.

The articulation of the teeth was such as to leave the remaining upper teeth in their entire circle, closing on the inside of the lower ones. The upper ones being firmly clasped by the teeth of the lower jaw, and of course so acting upon them as constantly to increase the deformity. The superior cuspid teeth were brought almost together; the palatine arch was so contracted that the sides or perpendicular portions were brought in positive contact, so much so, that it was difficult to pass a thin letter folder into the fissure thus formed. The lower jaw was protruding to a very great extent, the superior canines closing about three eighths of an inch inside and back of the lower ones.

It was very evident that the action of the lower teeth upon the upper ones must, within a short time, have brought the upper canines and bicuspids quite together. Add to this the contraction of the upper lip, which was greatly shortened from being cut away, and from having no teeth to support it, and the fact that the cartilage or point of the nose was drawn down, and we have a portrait of the case as I found it. Having many doubts of the practicability of any operation to overcome these manifold difficulties, I gave but little encouragement to patient or friends; yet being confident that the only remedy must come from our profession, I was willing to make an attempt. My first object was, so to speak, to unlock the jaws and to break up the constant tendency, by shutting the mouth, to increase the difficulty. This was done by first preparing a firm plate, upon which was soldered studs to keep the jaws apart, to break up the articulation, and at the same time, so arranged as to act as inclined planes in moving the two sides of the upper jaw outwards, or from each other, whenever the jaws were closed. This fixture was worn for some weeks on the lower teeth, but not making any considerable progress, I was induced in connection with it to try the bandage described by Dr. A. Westcott.*

This was worn only during the night, as then the muscles being in a relaxed state, and no voluntary resistance to its action would be exerted by the patient, the effect was doubtless nearly as great as if worn during the whole twenty-four hours. With the view of accomplishing the same end—that of spreading the jaws laterally, I also used a bar of wood, reaching from one canine tooth to the other, and of such length as to press firmly upon them; this was supported in its place by a plate that was swaged to fit accurately to the palatine portion of the upper jaw and about the necks of the teeth; to this was soldered two loops, through which was passed the wooden bar or brace. These were renewed and lengthened from day to day, and were of the greatest service in producing the desired effect, and I beg leave here to say that in all cases where bars are to be employed for similar purposes, I regard *wood* by far the best material; this is more agreeable to the sense of taste, less unpleasant in its pressure against the teeth, more easily adjusted, and retains its position far better than any metallic substance. The practice of using metallic jack screws, and also of drilling into the teeth in order to sustain the point of the screw, may now be obviated, as such a necessity and all irritation from galvanic action may be avoided by the use of wood.*

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* *Am. Journal of Dental Science*, vol. v., No. 2, p. 147.

The combined operation of the inclined planes, bandage and wooden bars, had the effect within four or five months to spread the jaws sufficiently to bring the upper bicuspids and molars of this jaw to fairly antagonize with the corresponding ones of the lower jaw, and also to greatly diminish the protrusion of the chin. While this was advancing, I was constantly bringing forward the teeth of the upper jaw by the use of wooden *wedges*, commencing with the canine teeth, which were thus moved about one eighth of an inch. The teeth thus brought forward, were kept in their places by soldering upon the plate (which had now to be re-swaged, to fit the present state of the mouth) collars or clasps. After having thus secured the canines in their new position, the next or first bicuspids were treated in the same way, so as to bring them in contact with the cuspidati. The first clasp or collar was now removed, and a similar one placed behind the bicuspidati, and so on till the entire arch was sufficiently spread in this direction. Notwithstanding I had now succeeded in correcting two important features in this deformity—that of restoring the arch of the upper jaw to its proper form, and that of retracting the under jaw—still a third difficulty remained, which bid fair to be more formidable than either of the others. I allude to the greatly contracted state of the upper lip, and the depression of the nose. Had this been properly attended to in infancy, in connection with the operation for hare-lip, it would have been comparatively an easy task; but at the present age of the patient, I had serious doubts about complete success. I made no attempt at restoring this portion of the deformity, till the operation for correcting the irregularity of the teeth and jaws was fully completed, and the mouth was in all respects prepared to receive a plate, upon which were to be attached teeth to supply the missing ones. I at first entertained the hope that this could be accomplished by carrying the plate very high up under the lips, and by giving it proper thickness, and thus to overcome the contraction by continual pressure, but in this I was disappointed—the irritation being too great to be borne by the patient, I was under the necessity of resorting to the scalpel, and to make a pretty free separation of these contracted parts (septum nasi) from the jaw, to which they were firmly attached. I had now no difficulty in preparing a plate for teeth and restorer, passing much further upward, which gave proper form to the lip and relieved the tension upon the point of the nose. I used for the *plate*, *thin platina*, and to secure a smooth and unirritating surface in contact with the parts which had been cut, I returned downwards as far as the free edge of the gum of the incisors, filling up the inter-space and below the edge, to give it the desired shape, with "Allen's body" or "continuous gum." The piece was then finished in the usual manner. Upon introducing this restorer, the tension upon it, caused by the excessive pressure of the contracted lip, occasioned a considerable irritation and inflammation. However, it kindly healed in the course of a few days: the parts assumed in all respects a healthy condition, with each feature of a most unsightly deformity more perfectly corrected than I at first dared to hope.

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* I would here take occasion to speak of the very ingenious little "jack screw" of Dr. Dwinelle, a most effectual apparatus in many cases, yet in the present case I was wholly unable to use it, owing to excessive galvanic irritation. This, however, may be in part owing to the manner in which I applied the fixture, as Dr. D. informs me that he has applied the lifting screws in precisely similar cases, without the least galvanic irritation—indeed I believe he claims for the screws that notwithstanding they are constructed of steel, while they are loaded with zinc, the latent galvanic action thus evolved forbids their rusting or consequent irritation.

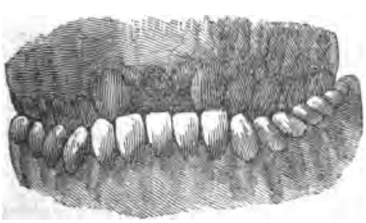


Fig. 1.

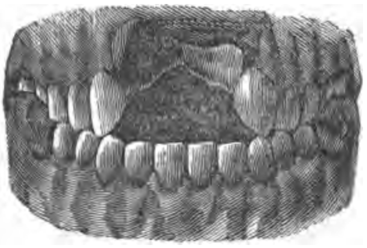


Fig. 2.

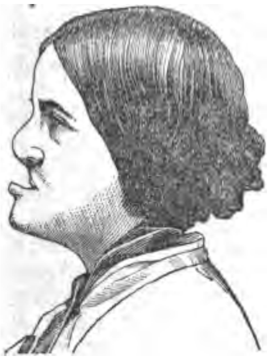


Fig. 3.

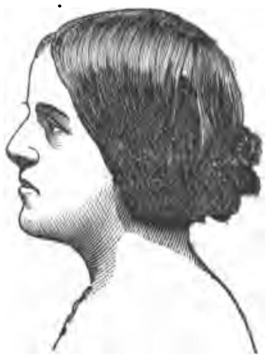


Fig. 4.

Fig. 1 represents the appearance of the mouth and articulation of the teeth before the operation was commenced; fig. 2—after the operation for expanding the jaws and regulating the teeth was completed; fig. 3—the appearance of the face before the operation was commenced; fig. 4—the appearance of the face at the time the patient was dismissed.

19 Bond street, New York.

Acute tuberculosis pulmonum with capillary fibrinous bronchitis.—Fatal in twenty-three days. By GEORGE S. HARDAWAY, M.D., House Physician, Bellevue Hospital. (Dr. McCready Visiting Physician.) Matilda Johnson, æt. 18, native of England, domestic by occupation, was admitted to Bellevue Hospital October 2d, 1857. Her mother died of phthisis, her father of cholera. Her catamenia came on when she was thirteen years old, but had never been regular, though the irregularity did not interfere with her general health. For the last year she had been subject to a slight cough, but she had not had expectoration or hæmoptysis; nor had she lost flesh; on the contrary, she was very fat when admitted, though her flesh felt soft.

She had always enjoyed excellent health up to nineteen days before admission, when she was out walking and got her feet wet. When she reached home she felt hot and feverish, and it put her out of breath so much to walk up stairs that she had to stop and sit down several times before she got to her room. From this time she began to cough with copious white expectoration and burning sensation in her chest, but she had no sharp or dull pain. She soon became very weak. Two days before admission her expectoration became yellow. It could not be ascertained what her treatment had been outside, but it was not active.

October 2d. Seen at evening visit. She was very weak; had dusky flush of cheeks; pulse, 140; respiration, 44. There was very slight œdema of lower extremities, which she had not observed. On physical examination of the chest, there was no dullness; fine sub-crepitant rhonchus over whole chest; voice and cough sounds natural. She was expectorating over a pint of muco-purulent matter a day.

Diagnosis—Capillary bronchitis, with a strong suspicion of recent deposit of turbercles.

Treatment.—Tinct. sanguinaria, turpentine stupes, beef tea, punch of brandy and milk.

October 3d.—Pulse, 148. Some difficulty in respiration.

October 4th.—Respiration easier, pulse, 152; expectoration not so copious, but she spat up about half teaspoonful of pure blood.

October 5th.—In forenoon: pulse, 160; appetite capricious; she was tired of the beef tea, and wanted something sweet; wished to sit up. At noon her lungs seemed filled with mucus, and she was given fifteen grains sulph. zinc, which vomited her freely, after which she felt better and ate half dozen oysters with relish. Afternoon visit: pulse, 144.

October 6th.—Forenoon: pulse, 144. Evening: pulse, 160. She still desired to sit up. She died rather suddenly that night at 12 o'clock, having walked to the water-closet, a distance of twelve or fifteen feet, a few minutes before.

Autopsy thirty hours after death.—Decomposition beginning. Cadaver well formed and not emaciated. *Cranium.*—not examined. *Thorax.*—Heart, healthy; lungs, the bronchial tubes were intensely inflamed; those of the left lung were filled with fibrinous casts; and the upper lobe of this lung was thickly studded with yellow tubercles. At the lower part of this lobe posteriorly the two layers of pleura were so firmly adherent to each other for a space about the size of a silver dollar that a portion of the lung was torn off in removing it. At this part of the lung there was a tuberculous cavity about the size of a large acorn. There was no evidence of pleurisy or softening of the tubercle at any other point. *Abdomen.*—Organs healthy.

This is believed to be a case of acute tuberculosis, because, 1. The patient had no expectoration, hæmoptysis, or loss of flesh until this attack, though she had had a slight cough for year. 2. Because the tubercles were deposited in only one lung. If the cough which began a year ago had been caused by tubercles, there would most probably have been some deposit in the right lung before this time.

The slight hæmoptysis which occurred on October 4th, can be accounted for either by the tubercles or the fibrinous bronchitis.

Interesting Anomaly. Reported by John G. Johnson, M.D., of Brooklyn; formerly House Surgeon to Bellevue Hospital, N. Y. J. G., native of Scotland, æt. forty-four, was admitted into Bellevue Hospital May 15th, and died on the 20th. As far as his history could be obtained, it was as follows: He was a maker of dial faces for clocks and watches. He had been able to support himself by this means till about one year ago, when his health failing he begged in the street. The night before his admission to the hospital he had crawled into a barber's shop, from whence he was removed to the hospital.

As the patient lay upon the dissecting table his legs were drawn up in the position in which a tailor places his legs when he sits cross-legged at his work. Both thighs were very much curved, and the legs also; the thigh and leg forming a symmetrical curve; each foot exhibited talipes varus to an extreme degree, so much so that if he had been able to walk, it would have been upon the dorsum pedis instead of on its side. The integument of the feet was very thin, showing that they had not been used in locomotion, while that of the knees and of the palms of the hands was exceedingly rough, proving that he had crawled from place to place.

Hands.—*Left* has only one finger and one thumb, which has more the appearance of a finger. Both the thumb and finger are of unusual muscularity and length. *Right* has two fingers and a thumb; the finger nearest to the thumb is small and seems to have acted merely as an adjuvant to the other finger in prehension; it is much shorter, more feebly developed, and curved from the thumb so as to form with the other finger a regular curve when the hand was bent in prehension. The upper extremities are well developed, showing a great contrast with the inferior extremities, which are but feebly developed.

Autopsy.—On removing the calvarium about six ounces of serum escaped. The convolutions of the brain were widely separated, showing there had been considerable effusion of serum. There were evidences of an old arachnitis.

Lungs.—Large vomicæ in apices of both, and tubercular deposit of various stages in whole of left and large portion of right.

The other viscera were found in a normal state; the genital apparatus well developed.

The right arm presented the most anomalous muscular development. The anomalies of this extremity were confined to the bones of the hand and the muscles of the forearm; in the hand two fingers and two carpal bones are wanting. The two fingers that are present, as shown by their muscular development, are the little finger and the index finger; the latter but feebly developed, and having but two phalanges. In the forearm some muscles are wanting, some entirely anomalous are present, and others deviating from the normal development only on account of the osseous deviation. In the rotation of the radius on the ulna, supination is effected directly only by the supinator brevis; S. longus is wanting; pronation is normal save only the insertion of the pronator radii teres upon the lower third of the radius. In the action of the carpus on the arm the extension is weakened by the absence of the brevior radial extensor and the flexion strengthened by muscular strips from the flexor sublimis digitorum inserted into the annular ligament at either side of the hand. In the action of the fingers and thumb both flexion and extension are performed only by a very irregular provision; the flexor sublimis and profunda act only upon the little finger. One head of the profunda arising from the posterior aspect of the ulna at the regular point of origin of the flexor carpi ulnaris. There is no direct flexion of the index finger, except by the action of an anomalous muscle acting in common on the thumb. This anomalous muscle arises by two heads. The first from the base of the coronoid process, and from the base of the olecranon and upper posterior aspect of the ulna. These heads unite and become tendinous in the middle, again divide into three muscular strips which continue muscular through the palm of the hand and are inserted into the aponeurotic expansion of the extensor tendons of each finger and thumb at the first phalanx. Flexor longus pollicis normal.

The extensor communis only on the index finger; extensor indicis normal. The extensor minimi digiti divides high up into two tendons which are inserted respectively into the first and second phalanges. The extension of the thumb is made mainly upon the second phalanx, into which are inserted both the extensor primi and extensor secundi internodii, and also a third and anomalous extensor muscle. The extensor ossis metacarpi pollicis normal. The muscles of the hand are regularly developed.

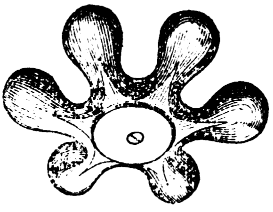
The muscular development of the left hand also presents anomalous points of some interest. In this hand there was the thumb and only one finger. The muscles inserted into this finger shows that it corresponds to the index finger of the normal hand rather than the little finger; for all the muscles that should be inserted into it, if it were the little finger, are wanting, with the single exception of the flexor carpi ulnaris which has only a single insertion into the carpus.

The pronator radii teres had the same peculiar insertion marked in the right arm. Low down at the lower third of the radius, stretching across from the base of the thumb to the finger in the place of the palmar fascia was an unusually strong fibrinous development, linking the bones together, and into this was inserted the palmaris longus unusually developed. Flexor sublimis digitorum ends in a single tendon which is perforated and inserted into the base of the second phalanx. Flexor carpi radialis, normal, except very fully developed. Flexor carpi ulnaris only one insertion into the carpal bones, the insertion into the little finger is wanting. The flexor profundus had only a single tendon which perforated the tendon of the sublimis, and was inserted into the last phalanx of the finger. Flexor longus pollicis and pronator quadratus normal. Of the extensor muscles the supinator longus and extensor carpi radialis longior, both normal; while the extensor carpi radialis brevior is wanting. The extensor communis digitorum is inserted by a single tendon into the second and third phalanges of the finger; while the extensor carpi ulnaris and minimi digiti are wanting. Anconeus normal. All the deep extensor muscles of the arm and hand are normal.

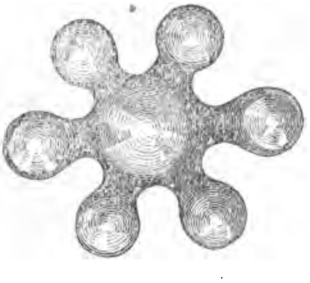
The lower extremities, not having been used in locomotion, were examined only in regard to their osseous peculiarities. The acetabulum and head of right femur closely approximate to anterior and inferior spinous process of ilium. There is true anchylosis of the knee joint, the femur and tibia forming a symmetrical curve; the knee joint completely filled with the osseous deposit, no traces of it being left save on the antero-inferior aspect, where there is a slight fissure. Patella about ⅓ normal size lying on the external condyle of the femur, but separated from it by a large and very strong bursa. Fibula entirely absent, no rudimentary indication of it. There was only a single tarsal bone which bore some resemblance to an os calcis; three metatarsal bones were articulated to this, and three toes with two phalanges each; the first phalanges of the internal and middle toes were terminated at tarsal extremity. The left lower extremity was as anomalous as the right. The femur and tibia have both the same curve, while the acetabulum as closely approximates the anterior inferior spinous process. There is no anchylosis of the knee joint, but in place of that we have two patella, one above the other, separated about ½ an inch, the interspace being filled with strong tendinous band. There is also in this leg an entire absence of fibula, and no signs even of rudimentary development. The os calcis is the only bone of the tarsus—the metatarsal bones, three in number, articulate directly to this, and the toes, which are three in number, have each no phalanges.

The skeleton is preserved with its ligamentous attachments in the Pathological museum of Bellevue Hospital.

A new form of Truss. By J. W. Riggs, M.D.—The instrument here represented, it will be seen, is radically different in form (and is believed to be also in its operation) from any truss hitherto known to the profession. The pad consists of a series of balls (see illustrations), knobs or protu-



External Surface.



Internal Surface.

berances, so arranged as to surround and firmly embrace all the tissues concerned in the formation of the hernial openings, and in such manner as that the entire force or pressure of the spring is exerted at separate and distinct points or intervals, along and contiguous to the inguinal canal on either side, and also on each side of both the external and internal rings. The advantages gained by this peculiar construction, and which will at once suggest themselves to the mind of the intelligent surgeon, are several, and some of these are believed to be of paramount importance in the treatment hernia—whether with a view to its radical cure or temporary relief only. 1st, Having many distinct bearings upon the surface, no movement of the body can possibly displace it. 2d, It allows the free admission of air, and thus prevents the heat and excoriation, so common, especially in warm weather, to the use of the ordinary truss. 3d, It offers no obstacle whatever to the free circulation of blood, but on the contrary, it necessarily invites and invariably causes an *increased* influx of blood throughout the subjacent tissues, and thus secures a positive *thickening* and *strengthening* of these parts, instead of the *attenuation* and *loss* of *substance* by absorption, which *necessarily* and *invariably* results from the use of a pad with a continuous convex bearing. Hence the decided advantages of this over the convex pad, for the radical cure of the malady. 4th, Every surgeon is aware of the ease and certainty with which, in the *worst cases*, the escape of the viscera is prevented, by the slightest pressure with the end of the finger properly applied, either over the rings or the inguinal canal, while in the same case, no amount of pressure with the *whole hand* would suffice to prevent their descent. Upon this principle, then, it is easy to see how this pad, with its numerous "finger ends," so to speak, possesses great advantages simply as a retaining-truss. Again, should the instrument be partially displaced, the intestine would be almost certain to encounter in its passage some one or more of these nodules, which would effectually prevent its escape. Finally, this instrument may be worn for years without producing absorption to any injurious extent—without injury to the spermatic cord, and in cases of long standing, where, from the use of an improper truss, or from other causes, the openings have become much distended, thus rendering the use of a prominent convex pad a matter of necessity; in all these, this instrument can be converted at pleasure into a convex pad, with a highly polished surface, by simply placing underneath the balls a thin shell or hollow cone, with which every truss is provided for that purpose whenever required.

It is deemed worthy of mention, also, that this truss will be constructed throughout of water-proof material.

MISCELLANEA.

Questionable advertisements.—The *Boston Medical and Surgical Journal*, of a recent date, contains a well-written article on this subject, in which it condemns with just severity the practice of those religious newspapers which crowd their advertising columns with the most irrational, and often obscene puffs of nostrums. It is unquestionable that the venders of these poisonous compounds seek the religious press as by far the most successful method of imposing upon the credulous public. The very medium gives them a color of indorsement by the editor of the sheet from which the religious community obtains its knowledge of the progress of the Christian church, and its weekly lessons in good morals and practical religious life. The remedy for this evil is with the readers of the religious papers—with the community at large. We should appeal in vain to the proprietors of these periodicals to discontinue such publications, if we based our appeal simply upon the injury it inflicts upon good morals, even upon the progress of true Christian principles. The nostrum-vender, with his money, has a power against which the public good, the interests of the church, will contend in vain. Let the community cease to patronize such papers, and then, and then only, we fear, will the appropriate remedy be applied.

We commend the following extracts from the article referred to, to the attention of those of our readers who take religious papers :

"To justify our strictures, let any cool-minded, sensible person judge of the *truth*,' and more especially of the ultimate and even direct *moral* bearing of the following extracts, which we make from an advertisement in the *Christian Witness*, of September 18th, 1857. If a religious paper is to be sustained, in any degree, by such means, we hope its props will be knocked from under it immediately.

"Side by side with a piece entitled the '*Lost Sheep*,' in the '*Children's Department*,' appears the advertisement headed 'Grindle's Ancient and Celebrated Japanese Life Pills,' which, the advertisers, under the protection of the clerical and lay authority engaged in *witnessing* for and *advocating* the Church, 'offer on a more extensive scale,' after having 'tested them in the worst forms of disease, and after having been urged to do so by eminent physicians who have tried them to their satisfaction.' We should like to see the names of these 'eminent physicians ;' for to *us*, this is either totally untrue, or else it charges a feebleness and incapacity upon physicians which we cannot credit.

"Hear the respectable advertiser further, always under the auspices of the Church—*proh pudor!* 'Performing cures where every other remedy had failed, we feel it our duty to spread the glad intelligence to every family of the globe. * * * Parts that were even decaying with disease are restored to a healthy, vigorous action, and disease eradicated as if by magic, leaving the system in a robust condition and less predisposed to contract disease again, of whatever kind. Possessing such penetrating and healing virtues, their success must be inevitable.' This is fine trash for the proprietors of a religious newspaper to present to their readers—do these gentlemen realize their responsibility? But the worst is yet to come: the advocate of the Church admits into its columns the following choice language. 'These ANCIENT PILLS are also an *invaluable* remedy for females suffering from suppression of the menses, the cause of so many declines and female weakness.' Aside from the poor grammar here displayed, we would simply ask the reverend editor, and the publisher, who is a communicant of the Church, if they do not *yet* know that phraseology nearly identical with this is the favorite dodge of the abortion-nostrum venders, whose advertisements fill many of our daily papers, *usque ad nauseam?* If they do not know this, it is time they did; and their first duty is to purge their paper of such declarations, which, even if not made with the *intent*, still bear the *odor* of evil-doing.

"As these, and similar, advertisements in no way advance the religious welfare of the people, but rather the reverse, that plea cannot be urged in extenuation of their presence in a professedly religious paper. There can, then, be but one other object, the wish for whose attainment is cogent enough to effect this purpose; and that is, the amount realized for the insertion of the vile paragraphs. Do, then, the proprietors of religious papers acknowledge that they willingly derive support from such sources? If so, we fearlessly say, better never a religious paper in the land! If these notices *must* be published, to poison, both physically and morally, the readers who peruse them, let, at least, the guardians of our holy religion shake their skirts free from such pollution! And let honest editors, whether their sheet be secular or religious, hesitate to issue such unwarrantable promises, such assertions that the slightest examination must falsify, such masked wickedness and such money-seeking, under groundless pretences."

The rights of authors.—Among the varieties of periodical medical literature, the discussion of rival claimants to priority in discoveries, operations, etc., is to us the least interesting, because the least profitable and satisfactory. It is scarcely possible to enunciate a supposed new principle now-a-days, without arousing a score of rival claimants, and no extent of reclamation, or power of declamation can compel any party to retire from the contest. We generally pass these wordy battle-fields with the simple wish that the principle or truth at issue, if of value to the profession, may not perish in the conflict, but, if possible, be thereby rendered more practically useful.

It must not be inferred from these remarks that we have no sympathy with the true discoverer, the original investigator, in his efforts to establish and maintain his just rights and honors. He not only has our sympathy, but our support in his disagreeable and unrewarded task. But the history of nearly every contest (and they are innumerable) for priority in discovery in the science or practice of medicine, will prove that it has been carried on in bitterness, and ceased without a conqueror. And whoever sets himself deliberately down to the task of investigating the "rights of authors," will too often find himself involved in a labyrinth from which he finds no clue to escape.

We have been led to these remarks by the frequent receipt of pamphlets relating to the controversy in regard to the so-called *Excito-secretory system of nerves.* The rival claimants to the discovery of this supposed relation between the spinal and ganglionic nerves, are the late DR. MARSHALL HALL of London, and in this country, PROF. CAMPBELL of Ga., PROF. ALLEN, of Mich., and PROF. PAINE, of N. Y. Of the American claimants to priority, we do not hesitate to accord to PROF. PAINE the merit of being the first to enunciate these views, both in his lectures and in his publications. We had occasion, however, to notice this controversy some three years since, and then remarked, "if we are not mistaken similar views have been advanced at a still earlier date." In the report of DR. BROWN SÉQUARD, in the present number of this journal, it will be seen that our impressions in regard to the earlier literature of this subject are confirmed by this distinguished and competent authority. We need, therefore, but refer those interested in this controversy to the remarks of this writer.

Journal of Physiology.—We have received the prospectus of a periodical having the foregoing title, which is to be published quarterly, at Paris, commencing on the first of January, 1858, and edited by E. BROWN SÉQUARD, with whom are associated ROBIN, ROGET, and THOZLAN. Each number will contain 160 to 200 pages, consisting of original articles, which are to form the largest portion, foreign memoirs, critical analysis of books, and a review of the progress of physiology in France, and other countries. The subscription price to the American subscriber is 25 francs; and may be obtained of M. Penington, Philadelphia.

The distinguished editor of this prospective journal is so well and so favorably known to the American medical profession, that it requires no assurances from us of the undoubted merit of the work. To those interested in the study of physiology, the first numbers will present unusual attraction, as they are to contain a detailed history of the progress of physiology during the years 1855 and 1856.

Report of the surgeon of the Middlesex hospital, London, on Dr. Fell's treatment of cancer.—It will be seen by referring to the Review department of this number, that the novelty in the treatment of cancer, which the learned (?) surgical staff of the Middlesex Hospital accord to Dr. Fell's method, namely, that of incising the cancerous tissue before the application of the caustic, is not new, but in fact, was a favorite practice of some of their *own* eminent, but evidently long-forgotten, surgeons. The humiliation of these *savans*, who have been for the last year gravely sitting in judgment upon one of the most transparent systems of quackery yet practised, is complete. They are condemned by the voice of their own fathers, who have arisen from the dead to claim the honors which their degenerate sons have attempted to confer upon a shallow empiric.

Bellevue Hospital.—The Committee of the Board of Alms-House Governors, to whom was referred the resolution of inquiry as to the expediency of introducing the homœopathic practice into this institution, have reported unfavorably to any change in the medical Board, and deprecate the introduction of any other system of medical practice than that now employed.

To Readers.—We are gratified to be able to announce that in future we have the promise of bi-monthly reports on the *Recent Advances of the Medical Sciences* in France, by Dr. Brown Séquard, the first of which appears in the present number.

The first of a series of bi-monthly reports on the progress of *Infantile Pathology and Therapeutics* also appears in the present number by Dr. Jacobi, of this city, a gentleman who has made this department of medicine a special study, and has access to the current medical literature of this and foreign countries.

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Dunglison (Robley). Medical Lexicon. A Dictionary of Medical Science. Fifteenth edition. Blanchard & Lea, Philadelphia, 1857.

Bedford (G. S.) Clinical Lectures on the Diseases of Women and Children. Fifth edition, carefully revised and enlarged. New York: Samuel S. & W. Wood, 1857.

Mitchell (Thomas D.) Materia Medica and Therapeutics. A new edition, revised and enlarged. Philadelphia: J. B. Lippincott & Co., 1857.

Meigs (J. Forsyth). A Practical Treatise on the Diseases of Children. Third edition, carefully revised. Philadelphia: Lindsay & Blakiston, 1858.

Miller (Henry). The Principles of Obstetrics, including the treatment of chronic inflammation of the uterus, considered as a frequent cause of abortion. Philadelpia: Blanchard & Lea, 1858.

Researches on Epilepsy: its artificial production in animals, and its etiology, nature, and treatment in man. First part of a new series of experimental and clinical researches applied to physiology and Pathology. By E. Brown Sequard, M.D. Boston, 1857.

Prize Essay. Rational Therapeutics. By Worthington Hooker, M.D. Boston, 1857.

Transactions of the Medical Association of Southern Central New York, at the tenth and eleventh annual meetings. Binghampton, 1857.

A Public Lecture on Medical Ethics, delivered by appointment of the Memphis Medical Society. By A. P. Merrill, M.D. Memphis, 1857.

Catalogue of Human Crania in the Collection of the Academy of Natural Sciences of Philadelphia. By J. Aitkin Meigs, M.D. Philadelphia: J. B. Lippincott & Co., 1857.

Introductory Lecture delivered by D. Warren Brickell, M.D., Professor of Obstetrics, N. O. School of Medicine. Nov. 3, 1857.

Urethro-Vaginal and Vesico-Vaginal Fistules, etc., by N. Bozeman, M.D., Alabama. Montgomery, 1857.

An Address delivered before the Graduating Class at the Dartmouth Medical College, etc., by George H. Hubbard, M.D. Manchester, 1857.

Materia Medica; or, Pharmacology and Therapeutics. By William Lully, M.D. Vol. I., No. 23. Sept. 1856.

THE NEW YORK
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FOR MARCH, 1858.

PART FIRST.
ORIGINAL COMMUNICATIONS.

ART. II.—*Difficult Cases of Labor.* By GEORGE T. ELLIOT, Jr., M.D., Physician to Bellevue Hospital, and to the Nursery and Child's Hospital. New York.

Albuminuria—Uterine Fibrous Tumors—Early Rupture of Membranes—Rigid Os—Douche—Chloroform—Incision of Cervix—Forceps—Death—Extraordinary Post-mortem Appearances—Child Born Alive—Its Fate.—Mrs. E——, a primipara, aged 26, well built, very cheerful, and believed by herself and friends to be in the enjoyment of good health, came under my care on the 20th of November last. I at once recognized the evidences of albuminuria. Extremely puffy face; hands and arms which would not pit on pressure, but still appeared swelled, as were also the feet; constant headache; eyesight disturbed by flashes of light, muscæ volitantes, and blurred outlines; thought that the quantity of urine had diminished somewhat of late; bowels confined; had menstruated for the last time on the 28th of February.

Some of the urine, passed on the following morning, became almost solid by the application of heat and nitric acid. Microscopical examination neglected. By my orders, she was cupped over the kidneys, placed on the use of Tarant's Selzer Aperient, and directed to send some of her urine for examination, on the 27th. At this time, I requested the husband to call at my office, where I tested some of his wife's urine in his presence, compared the results with some healthy urine, and mentioned my apprehensions of puerperal convulsions.

On the 29th, received two specimens of urine, the one passed on the morning of the 28th, after a quiet night, the other on the 29th, after a very restless night, in which, to use the husband's words, "there was an apparently uncontrollable emission of water mixed with blood." This, which was, without doubt, liquor amnii, had probably become mixed with the specimen of the 29th, as it evidently contained blood. The specimen of the 28th contained less albumen than the one previously tested.

On visiting her, found that the headache and amaurotic symptoms were persistent, and that so much effect had not been produced on the bowels as was desirable. She was very cheerful, had no pain, face decidedly less swelled: left after desiring that she might have a cathartic, and that the nurse should be sent for, as I anticipated labor.

Labor.—At 3 A.M. of the 30th, was summoned, as the nurse thought that the child would soon be born. Found her with extremely powerful uterine contractions, which, then and later on, would last thirty, thirty-five, and forty seconds by the watch; liquor amnii dribbling away constantly; patient excited, very restless, and bearing down with her pains; os uteri very little dilated, rigid, and less dilatable than any which I can call to mind; head presenting, but position not then determined; fœtal heart, however, decidedly to the right side below the umbilicus, and therefore concluded that the position was the 2d of Naegelé; which was subsequently ascertained to be the fact. Pelvis well formed.

On examining the abdomen, found a hard tumor at about the junction of the left iliac and umbilical regions. It seemed about the length of the forefinger, with a firm pedicle. This, on examination, I decided to be a fibrous uterine outgrowth, and mentioned to the husband and others the likelihood of another on the posterior wall.

The uterine contractions continued as vigorous as ever, slowly forcing the head and cervix towards the pelvic cavity, but without any effect on the os; so I used the warm water douche in the manner elsewhere described by me in this Journal, and repeated the same three times during the day, but with no effect.

Told the patient that I would give her chloroform, but would not promise that its influence should be kept up until the labor had terminated. In the afternoon she consented to take it for two or three hours, during which time she slept peacefully, with no abatement of the uterine contractions.

At about half-past seven in the evening, the pulse, which had been rather slow, was becoming somewhat excited; bodily and mental restlessness extreme; uterus long since drained of its waters, with the os as undilatable as it had been for twenty hours, slightly lacerated on the left side, and down in the cavity of the pelvis; fœtal heart beating; perineum rigid.

I then told the husband that, in my judgment, this had gone far enough; that, fortunately, and, as I believed, from prophylactic treatment, convulsions had not occurred, but that the albuminuria still overshadowed her; that the rigidity of the os was such, in my judgment, as clearly to indicate the propriety for its division; that, considering the position of the head, it would probably be better to terminate delivery with forceps, and suggested a consultation.

Consultation.—Professor Barker became associated with me in the management of the case, and saw her at about half-past nine, when she was well under chloroform. He recognized every point which had been made, and warmly approved the measures proposed.

Operations.—Dr. Schermerhorn having kindly given his assistance, I divided the cervix, with Simpson's uterotome, on the right side, opposite the slight laceration referred to. Dr. Barker agreed with me in thinking that I might introduce the forceps through this opening, which was about the same as in a case of incised os, recorded by Dr. I. E. Taylor in the *Medical Times.*

The elevation of the head demanded the use of long forceps, and the head, promptly grasped, did not slip during delivery. After an ineffectual attempt to rotate the occiput anteriorly, I delivered a living female child in obedience to the rules for this presentation, and with the usual difficulty. Unfortunately, the patient being drawn up on the bed, unexpectedly to myself, at the moment when about to disengage the face, a laceration of the perineum occurred, which involved a few of the lower fibres of the sphincter.

Condition of child.—Traces of the forceps on the head were very slight, and after plunging the child in hot and cold water alternately, with frictions, slapping, and occasional resort to the "ready method," it cried loudly, and looked well, though extremely thin and puny.

Uterine tumors.—Now the diagnosis of the uterine tumor was shown to be correct, while another and larger one was found springing from the posterior wall, and met with by the right sacro-iliac synchondrosis.

Placenta.—About an hour after delivery, the uterus contracting, and then lazily relaxing over the placenta entirely retained within its cavity, I requested Dr. Barker to ascertain if there was any cause for delay. He found it attached to the anterior wall, near the fundus, and partly adherent, necessitating careful detachment. He removed it wholly, membranes and all, while I maintained tonic uterine contraction, with my hand over the fundus.

Drs. Barker and Schermerhorn now left me, as the mother and child were doing well, and I remained by the bedside for some time longer with my hand over the fundus, to guard against the possibility of uterine hemorrhage.

Alarming symptoms.—At last, when about to apply the binder, there came a sudden and alarming change in her expression, pulse, temperature, and respiration. The last was slow, jerking, and abdominal, deciding me not to apply the binder, lest it should interfere with the action of the diaphragm; the pulse was alarmingly feeble and slow; the face and extremities very cool; and the general expression so like that of a patient of Professor Gilman's, once seen with him, as to awaken grave anxiety in my mind.

The uterus remained contracted, and no hemorrhage occurred.

Consultation.—Having plenty of assistants, made one hold up both legs, and two others the arms; the head was placed on a level with the trunk; ordered brandy and water with strong frictions, while I kept my hand firmly over the fundus to insure against the possibility of hemorrhage. My assistants could not give the brandy without provoking paroxysms of coughing, and so sent my carriage instantly for Dr. Barker, and, as he was not at home, my friend, Dr. George A. Peters, was brought to the bedside without a moment's delay. He fed her successfully with brandy and she rallied. After these dangerous symptoms had passed, we talked to her of her child, and implored her to calm her restlessness, and keep quiet, but with little avail, for she would flounce from one side to the other, throwing her pelvis clear from the bed.

Dr. Peters stayed with me till 3 A.M, giving her brandy and milk punch, and she continued to improve. Her pulse was good, her intelligence perfect, but her skin was cool and her restlessness very great.

At this time we thought that five drops of Magendie's Solution might calm her excitement, and it was given, when Dr. Peters withdrew. Remained with her till nearly 8 A.M., December 1st, during which time she had some refreshing naps, though I could not say that the morphine had produced any perceptible effect. The uterus remained well contracted, and no hemorrhage had occurred: gave her seven drops more, and left her, after strongly enjoining the necessity for quiet.

Relapse.—By 10 was again with her, just after a sudden change had occurred, similar to that of the previous night. She was perfectly intelligent, very much excited, lying on her left side, and imploring me to allow her to change her position.

Scarcely had I promised to lift her on her back, when she threw herself completely on her right side, raising herself on her heels and shoulders, and her heart never seemed to recover its force from that moment.

Death.—She died immediately after vomiting some brandy, during the prolongation of the agony. With her last words she complained that some brandy seemed to have gone the wrong way. No hemorrhage had taken place; the uterus was firmly contracted.

Post-mortem—Temperature.—According to the register of Mr. E. Meriam, the thermometer marked, on December 1st, at one P.M., 50°; two, 52°; three, 50°; four, 48°; five, 45°; six, 45°; seven, 42°; eight, 40°; nine, 40°; ten, 39°. No observation from eleven P.M, of December 1st, till five A.M., December 2d. Six A.M., 32° (white frost); seven, 32°; eight, 34°; nine, 36°; ten, 40°; eleven, 42°; twelve, 42°.

Examination conducted by Dr. George A. Peters and Professor Van Buren, twenty-seven hours after Mrs. E——'s death. The body had remained on the back, in a room without fire and with the windows open.

Appearances of the body.—So great a change had taken place in this time, as to render the body almost unrecognizable.

The face was greatly swollen by emphysema, and the surface of the body down to mid-leg and to the wrists crepitated in the most marked manner. No post-mortem discoloration of the abdomen; but post-mortem lividity over the back, and greenness of decomposition with bullæ over the lateral aspects of trunk, especially over thorax.

On opening the abdomen there was so great an escape of gases, evolving a strong odor of sulphuretted hydrogen, that we were obliged to open doors and windows. Interior of body yet warm.

Head not examined, by request.

Larynx and *trachea* normal.

Thorax.—Both *pleuræ* universally adherent, nothing of interest noticed in *lungs*. *Heart* normal in size, contained no air in its cavities; no clot in pulmonary artery, (such as terminated the life of the Duchesse de Nemours) apparently fatty, with patches of atheroma along the aorta. Pericardium normal. Blood coagulated.

Abdomen.—No peritonitis, or unusual amount of fluid in cavity, sub-peritoneal cellular tissue everywhere emphysematous, dissecting off large blebs of peritoneum. On greater curvature of stomach, cellular tissue around gastro-epiploic vessels, so aërated as to simulate distension of the vessels. The *intestines* moderately distended with flatus, crepitated everywhere from emphysema of their sub-peritoneal cellular tissue.

Liver.—Crepitated everywhere to the touch, café au lait in color, and so friable as readily to break down in the necessary manipulations for removal.

Spleen.—Apparently normal, except similar crepitation.

Kidneys.—Excessively soft, crepitating to the touch; their capsules dissected by the emphysema. No marked appearance in one not found in the other.

Uterus.—Firmly contracted, and emphysematous. Removed for examination, together with heart, kidneys, and portion of liver, when they were also submitted to Professor A. Clark and Dr. C. E. Isaacs, and shown to the Pathological Society.

The *uterus* displayed two sub-peritoneal uterine outgrowths, fibrous in character, irregularly shaped, and pediculated; the smaller one, situated on the anterior surface, to the left of the mesian line, about midway between fundus and cervix. The other, posteriorly, to the right of the mesian line, near the junction of the body and cervix. The former measured two inches in length, and three quarters of an inch in width; the latter four inches by two and a quarter. The fundus anteriorly presented a smaller fibrous tumor, the size of a split white bean.

On examining the os uteri from within the vagina, no appearances of sphacelus, nor of laceration extending to peritoneal coat were observable. Traces of the incision were distinguishable, as well as some other slight solutions of continuity, but none of them differing from what may frequently be observed after parturition. On section of the anterior wall through the mesian line, the uterus was found firmly contracted, the cavity contained a clot which was estimated to weigh less than an ounce.

On careful examination the internal surface presented no appearance whatever of injury.

Microscopical examination by Drs. Clark and Isaacs.—*Uterus.* Fibres of inner surface certainly undergoing fatty degeneration. *No evidence of any inflammatory condition.*

Heart.—Studded with patches of atheroma externally and along the aorta. Numerous whitish spots on surface and in muscular tissue, which Dr. Clark supposed to be purulent deposits at first; but, on examination, no pus was found, but granular matter with globules of oil. Muscular structure had not undergone fatty degeneration, but very soft, the least touch of the scalpel producing a whole microscopic field of fragments.

Liver.—Fatty.

Kidneys.—Dr. Isaacs has furnished me with the following note of their condition.

"In the hottest weather of summer I have often made post-mortem examinations of subjects which had been dead nine or ten days, and wherein the organs were not as much advanced in putrefaction as in the present instance. The liver, kidneys and uterus crepitated strongly under pressure, from the presence of gases among their tissues. The capsule of the kidney was perfectly loose, and separated with the slightest touch. On separating it, the cortical surface exhibited numerous elevations and depressions, as in the cirrhosed kidney. The cortical substance was very much softened, and easily broken down on slight pressure, and gave the same sensation as the lung when this is cut into by the scalpel. On microscopical examination the kidneys were found in an advanced stage of Bright's disease. The malpighian bodies were of various sizes, some of them very small. The fibrous ring of the matrix surrounding them was much thickened. The capillaries of the malpighian tuft contained numerous oil globules, as did also the minute arteries of the cortical substance. The tubes were generally, and in many instances entirely, denuded of their epithelial cells; many of which were disintegrated, or resolved into granular matter. In the numerous specimens which I examined, I could not find anything like healthy structure in the cortical portion. It is an interesting question how far the diseased state of the kidney, and the consequent retention of the elements of the urine in the blood, contributed to the rapid decomposition of the different organs."

Dr. Clark corroborated the statement of Dr. Isaacs, and added that many of the cells in his specimen were loaded with fat. Dr. C. had also made the independent suggestion that the excessively rare degree of softening observed was probably due to some ante-mortem septic influence with which we are not familiar.

The *child* was found to present some paralysis of the portio dura of the left side from pressure of the forceps, which, however, wore away; an accident that has occurred several times in my practice, and never with any unfavorable consequences. As Chailly says, "*Tout le monde sait que cela n'a aucune importance, que quelques jours suffisent pour faire disparaître cet accident.*" A wet-nurse was procured, but it pined, and dwindled away, dying when but a few days old. It presented no symptoms of disease or injury, but faded away as a puny twin child often does; and I had not the heart to press for a post-mortem examination.

REMARKS. *Albuminuria.*—The relations of the albuminuria to this case are interesting, and I think that there are good grounds for believing that early prophylactic treatment warded off the great danger apprehended from puerperal convulsions; while I am convinced that the marked restlessness (which probably hastened death) was but one of the Protean forms of this subtle poison.

It is to be regretted that microscopic examination of the urine was neglected, as it is likely that the *advanced* disease in the kidneys would have thus been recognized, and a clearer prognosis established; but the impression made on my mind by the appearance of the patient, and her history, led me to classify her with that large group of primiparæ, in whom albuminuria depends on temporary congestion, and disappears so speedily after expulsion of the ovum.

And I dwell on this omission in order to determine those who may take the trouble to read this paper, never to be satisfied in those cases with simple appreciation of albuminuria, and this, notwithstanding the liability to failure in the recognition of advanced disease.

The following case, with the progress of which I was familiar, illustrates this last point so forcibly and bears so directly on all cases similar to that of Mrs. E., that I requested Dr. Van Buren, in whose charge it was, to furnish me with its history.

Illustrative case—Bright's disease—Fatty heart and kidneys.—"Mrs. M. died at the age of 34. In early life she enjoyed florid health; married at 27; had suffered severely from dysmenorrhœa from the age of 20, which was only relieved by division of the cervix uteri, by Simpson, of Edinburgh, four years before her death. She was never pregnant. The symptoms which ushered in her fatal illness, approached insidiously, and advanced gradually and steadily to the end. They consisted of a peculiar irritability of temper; breathlessness, and palpitation of the heart on slight exertion; languor and debility; complete loss of appetite, and progressive emaciation, with a pallid, straw-colored complexion. The disgust for food was excessive; it could only be taken in small quantities, and with much effort on her part; and it caused always great complaint when swallowed, and nausea afterwards. Her pulse during the last six weeks of her life was about 120, and the action of the heart was rendered irregular by the slightest excitement. She complained during this time almost constantly of violent burning pain under the sternum; occasionally numbness of the extremities, and on two or three occasions, had attacks resembling hysteria, in which she thought herself dying. The bowels acted regularly; no thirst; *urine always normal in quantity, and although examined frequently by Dr. A. Clark, who attended her with me in consultation, exhibited at no time any deviation from its natural condition.* Death occurred rather suddenly by syncope.

"*Post-mortem.*—Kidneys presented most unmistakable evidences of Bright's disease in an advanced stage. The liver and heart were both fatty, the latter in an unusual degree; the whole organ being flabby, yellow and mottled, and its columnæ carneæ transversely streaked with yellow bars, and presenting a singular, mackerel-like appearance. On careful microscopical examination, it was impossible to find a specimen of healthy muscular fibre throughout its tissue."

These cases all demonstrate the necessity for post-mortem examinations. The very discovery that in Mrs. E.'s case death could not, under any circumstances, have been delayed, that even, though never pregnant, she probably would not have lived long, is eminently consoling to one assuming such responsibility.

Causes of fatal results after operations, independent of the operation.—I believe that the true statistics of operative midwifery have yet to be written, and that we never can estimate the necessary mortality until we shall possess the data obtainable after death, and the relations of diseased viscera to the result.

What we are content, in many cases, to sum up in the emphatic word "*shock*," and refer to the influence of an operation, might often be referred to internal lesions unappreciated before death; and this fact should stimulate our careful examination of every patient whose labor demands the intervention of art. I remember a case of version, which I perperformed, after which, the woman sank rapidly and died, without, in my judgment, symptoms traceable to else than I could estimate as shock; but the discovery of fatty kidneys, liver and heart, accounted readily, in my mind, for the inability to rally.

It is greatly to be hoped that these accidental complications may in future statistics bear their full share of the responsibility for fatal results, and that the obstetric surgeon may thus gain a clearer knowledge of his risks, a view, indeed, forshadowed by old Portal, in 1685, when speaking of fatal cases in midwifery, from operations which he did not consider as entitled to the blame.

"*Mais si elles meurent, c'est bien souvent la mauvaise habi-*

tude du corps, ou quelque fluxion de la poitrine, comme j'ai remarqué à plusieurs femmes qui estoient mortes en couche, dans le temps que je demeurois à l'Hôtel Dieu de cette ville, leur trouvant les poumons alterez, pourris, ou abscedez."

Rigidity of os.—Early escape of waters was of course the principal cause, but had the fibrous tumors aught to do with this accident? Interfere with muscular force they certainly did not; but may not the tendency to this growth have impaired dilatability of cervix, somewhat as Bennet supposes that chronic induration of the unimpregnated cervix may produce similar results at term?

Incision.—The propriety of incising the rigid os is a question which has not received all the attention which the procedure merits, though there are frequently cases occurring which might be benefited by the operation. Every one who has seen much of midwifery, has seen cases of this class which resist all methods of treatment.

In the present instance, the *douche and chloroform* were relied on, and proved utterly inefficient, though the chloroform was not given as is customary in my practice. Under the peculiar circumstances of the case, and with the prospect of such delay, I was not willing to promise (as I am in the habit of doing) that the patient should not awaken until completion of the labor; and Mrs. E. preferred to await a time until this could be agreed upon. Still the *three hours* or more, during which she was under the influence of the anæsthetic, produced no relaxation whatever, though—as I have said—the uterine contractions were not diminished thereby.

Now what was to be done in a case of this description, where twenty hours of severe, unremitting labor pains had produced no effect—where the liquor amnii was entirely discharged—where the many dangers from albuminuria overshadowed the patient—where the abdomen was becoming tender to the touch?

To have resorted to other means requiring time would have added additional danger from delay—for I firmly believe that risk to both lives is in direct ratio to the lapse of time from escape of waters; and my experience of all methods recommended for overcoming rigidity did not warrant me in anticipating better results from persisting in their use.

Duration of rigidity.—How long the labor might have lasted if unrelieved, or what contingencies might have occurred, may be estimated from the recorded results of similar cases. An example of their obstinacy was published by Dr. Gardner, where the cervix uteri, tightly embracing the child's head, came externally to the vulva, and demanded incision, with a avorable result.

Case illustrating duration of rigidity of os uteri.—During my residence in the Dublin Lying-in Hospital in '49, I was attending a woman in hard labor, whose membranes seemed to me thick, and the sole cause of delay. Dr. Shekleton disclosed my error to me, and showed me that what I took for membranes, was the thinned and expanded cervix, and that the os uteri was a little dimpled depression, difficult to find. This woman, instead of being promptly delivered, as I anticipated, remained in labor several days. But in this and many such cases *delay was of minor importance, for the membranes were intact.*

Plan pursued by nature.—What does nature do in so large a proportion of these cases where the os uteri dilates sufficiently to permit passage of the head, with some injury to structure? She lacerates the os and cervix. Sometimes when the latter was œdematous before this occurrence, its thick edges even cause anxiety to beginners.

I firmly believe that there are many cases of rigidity in which we will derive benefit from thus imitating nature more frequently than we do. I have, in several cases of emergency, applied forceps within the cervix where dilatation had not been fully completed, and lacerated the os purposely in withdrawing the head, just as nature would have done had she completed the delivery herself; and this because I preferred the lacerated to the incised wound. Yet it would seem that there is little risk from the incision, since it is an operation steadily gaining the confidence of those availing themselves of its advantages.

A necessary caution.—One point must always be borne in mind, viz.: the necessity for carefully examining lest any large vessel should be pulsating in the line of the proposed incision. It happened on one occasion, at least, to Dubois, that he had such hemorrhage from a divided vessel, as to demand immediate forceps delivery for the mother's sake.

Occipito posterior presentations.—One of the difficulties in this case was the failure to rotate the occiput anteriorly, notwithstanding my strenuous efforts. I firmly believe that nature herself does this in the vast proportion of these original presentations, and also believe that the alteration may be frequently made, if the practitioner do not use a forceps with too large blades of too great pelvic curvature. Simpson's were applied in this instance, and with them I have succeeded in thus simplifying delivery.

Case of occipito-posterior presentation.—In one of my cases, however, seen with Dr. Metcalfe, the position was not recognized, and the primipara suffered bad laceration of the perineum from the delivery of a boy weighing over thirteen pounds. The difficulties of that case were such, however, as would probably have rendered the conversion impossible, and this view is confirmed by the fact that the lady has since given birth to a child, weighing a little over twelve pounds, after a severe labor, unassisted by art, with the occiput thrown into the hollow of the sacrum, and sweeping the perineum, which had united satisfactorily.

"May my children," said the father, "die as they were born—looking upwards."

Post-mortem decomposition.—The rarity of these appearances may be surmised from the fact, that no similar case was alluded to in the discussion of the specimens at the Pathological Society; and I have not since had the leisure to look up the subject. It is noticeable that the intestines, while presenting the appearances described, yet had not undergone the changes described by Dr. Lynn, in Rankin, for January to June, 1856; nor, indeed, did the condition of the uterus present any similarity with that of the parts operated on in those military hospitals.

Case.—Woman deserted by her physician—Child dead—Uterus distended with gases—Version—Death.—The following meagre details are all that I possess of a case unique in my experience.

During my residence in the Lying-in Asylum I was sent for on one occasion by Dr. Pulling, to see a patient in the last stages of exhaustion from protracted labor. She had been deserted by the practitioner who had undertaken the case, and then Dr. Pulling was summoned. My friend Dr. Isaacs happened to be with me, and accompanied me. We found the patient with all the symptoms attending extreme exhaustion—child dead, with head presenting and floating above the linea ileo-pectinea. The *uterine tumor* was markedly tympanitic, all the waters had escaped; pelvis ample. The uterine walls were so distended that the child floated in these gases, as though in the liquor amnii.

Under these peculiar circumstances decided to perform version, as it seemed to me that this could be performed with great ease, and no delay. My expectations were verified. Do not think that I ever turned more readily, not even with the second twin. While disengaging the head inhaled a quantity of such fœtid gases escaping from the uterus, that I was obliged to give up the management of the placenta, and retire gasping and retching to a neighboring window. The woman died within the twenty-four hours. No post-mortem obtained. The child was not emphysematous, nor very putrid.

REMARKS.—This is by no means the only case that I have seen where a practitioner has waited for the natural termination of labor, until such alarming symptoms have presented themselves as to frighten him away from his patient. The condition of a large class of our poor is deplorable in the trying hour of parturition; and I can truly say that I do not believe that malapraxis is so rife in any other department of the profession. To steer that happy medium between criminal neglect and criminal rashness is, indeed, difficult in many cases, even for the enlightened and conscientious physician. But what can be hoped from a class of male and female practitioners, who are profoundly ignorant of the principles and practice of obstetrics, who attend cases for the fee alone, and who do not hesitate to desert a woman from mean and ignoble apprehension of injury to their reputation from a fatal result; sometimes running away, and sometimes absenting themselves with specious excuses.

Case.—Tedious labor—Forceps—Safety to mother and child—Novel views of uterine hemorrhage.—The proficiency of a certain class may be illustrated by this example. Recently I was sent for to Yorkville, to deliver a woman who had been in labor two or three days, and took with me my friend Dr. Reuben Cobb, of N. C., then one of the house physicians in Bellevue. We found a woman in a deplorable condition, with nasty green vaginal discharge, and greatly swelled vulva, but with the fœtal heart audible, and head presenting in the superior strait, with the movement of descent not yet completed. Dr. C. brought her under the influence of chloroform, and I delivered her of a living child, which did well, as did also the mother.

Before leaving, I took the midwife into another room, to ask what she would do if flooding should occur. With much blarney, and approval of my operation, she replied, "Sure, darlint, and I niver fear that, at all at all. I just goes into the garden, and takes a bit of clay about as large as the palm of my hand, and puts it on the pit of the stomach, in the name of the Father, Son, and Holy Ghost."

Seeing that this act of simple faith was all that this poor woman had to rely on, we thought it advisable to administer a good dose of ergot before leaving.

Case.—Neglected transverse presentation— Version—Death.—This same midwife subsequently sent for me to attend a poor woman under her care, from whose vulva the arm of a dead child had been allowed to protrude for twenty-four hours. Version was effected without the slightest difficulty after

Dr. George A. Peters had brought her under chloroform—but she sank within twenty-four hours.

Case.—Deformed pelvis—Forceps—Death from perforation of uterus by sacral promontory—Child died two days after from apoplexy.—The report of this case is principally in the words of Dr. Geo. S. Hardaway, House Physician, then in charge of the lying-in wards.

Hannah McGuire; æt. 18; Irish; primipara; married (?); taken with labor pains at 7 A.M., Jan. 16th, 1858. At 8 A.M. examined by Dr. Hardaway, who noticed that the pains were weak, head presenting, and entirely above the ileo-pectineal line; os soft, and had not yet commenced to dilate. Pelvis somewhat under size, but difficulty therefrom not anticipated. Labor progressed slowly until 9 P.M., when membranes ruptured, and most of the waters escaped. Os then larger than a Spanish dollar, and dilatable. Anterior fontanelle felt on the right side of the pelvis—sagittal suture passing transversely to the left—posterior fontanelle not recognized. Fœtal heart distinct in left iliac fossa. Pains continued throughout the night, but were not strong. At 11.30 P.M. she was brought under the influence of chloroform, and after this, though the pains continued, she remained comfortable until 3.30 A.M., when she began again to suffer with the pains. She vomited frequently, and had an unnatural stare.

Contraction of the antero-posterior diameter of the brim was thought to be the cause of the delay. 7.30 A.M., Jan. 17th. Countenance has changed very much since labor set in. It is pinched, expressive of anxiety, and she looks much older. Head has made no advance. Vagina moist and cool. Pulse about one hundred.

My visit.—At this time I was sent for, and saw the patient before meeting with Dr. Hardaway, or hearing the report of her condition during the night. I had, however, seen her in the ward on the previous day, though without having had my attention especially directed to her. I was much struck by the change in her countenance just described. Her pulse at 9.30 was 120; her abdomen a little tender; vagina cool, moist, and the discharge perfectly normal. Os uteri, in my judgment, sufficiently dilatable for any mode of delivery. Head resting above ileo-pectineal line, and detained there by diminution of the antero-posterior diameter of the brim. Sufficiently movable for version or any operation. Fœtal heart beating.

The impression made on me was that delivery was called for imperatively, and I preferred the use of forceps.

Consultation.—In the consultation which followed a difference of opinion arose, contraction of the brim not being admitted as the cause of the delay, which was attributed mainly to feebleness of the pains. After urging my views strongly I deferred, and acquiesced in the exhibition of ergot, which was given to the extent of twelve grains, in four doses, by which time its specific effect began to appear.

At 3 P.M., or about four hours after the first dose, the woman's condition was not improved. She vomited more and looked badly. The temperature of the vagina was little altered, the discharge was perfectly natural, the head now pressed more firmly in the brim. Immediate delivery was considered advisable.

Operation.—She was brought under the influence of chloroform, by Dr. Andrews, and I proceeded to apply forceps. The first blade passed rapidly in front of the left sacro-iliac synchondrosis, the other, without difficulty, behind the right acetabulum, allowing an interval for a long uterine contraction. They did not slip, and I rapidly drew the head through the brim, rotated the occiput anteriorly, and delivered a living male child, weighing six pounds, without lacerating the posterior fourchette.

In separating the os uteri for the introduction of the first blade, I felt a warm stream on my fingers, and, holding them up, showed them to be covered with a darkish fluid, no trace of which had previously been met with in the vagina.

The placenta gave no trouble.

Appearance of Child.—The head of the child presented a deep indentation opposite the fronto-parietal suture of the left side, where it had been pressed against the promontory of the sacrum, and that bi-parietal diameter was additionally lessened by a slighter depression at the opposite point, confirming the diagnosis of deformity at the brim.

Subsequent management.—A bandage of oiled silk was now applied under the binder: ℥j of whisky, with gr. ss of morphia given, the patient removed to another ward, and ordered ⅛ gr. every hour until she slept: but she only got four doses during the night. She slept some, but not well, and vomited frequently.

January 18th.—When seen in the morning by Dr. H. she was not vomiting, and was given ss gr. of morphia, which she showed no disposition to reject. Pulse, 134. Respiration entirely thoracic, great tenderness over the abdomen with tympanitis. Ordered ¼ gr. every hour.

10½ A.M.—I saw her when she was gulping up everything she swallowed. Ordered Emp. Vesic. 6 × 6 to abdomen, and that she should be brought under the influence of opium.

To check her vomiting Dr. H. gave her gtt. xv. of hydrocyanic acid, in four doses, half an hour apart, without any influence on the regurgitation. She was given one grain of morphia every hour, per rectum, and it was attempted to vesicate the epigastrium by Granville's Lotion, in order to apply morphia endermically: but the lotion was not good, and did not vesicate till 5 P.M., when a grain was applied to the blistered surface. At 1 P.M. the pulse was 144.

9 P.M.—Pulse 176. Respiration 34, entirely thoracic, constantly regurgitating, even the pellets of ice, which were alone given by the mouth. Under the influence of opium, bore strong pressure over the abdomen without complaining, moved herself in bed without pain; said that she suffered none; pupils contracted; wandering a little in her mind. Lochia had ceased, for which a warm poultice had been applied to the vulva.

11 P.M.—Regurgitation has ceased, having only brought up one mouthful since 9 o'clock. Pulse 160, scarcely possible to count it at the wrist. Respiration 36. Moaning.

Until 1 A.M. (19th) she continued to take one grain of morphia per rectum every hour, with no effect on the respiration, which continued about the same until death. The pulse could not be counted at the wrist after midnight; after which time she was quiet; did not vomit any more. Died, 3.15 A.M., 19th.

The child seemed likely to do well, but sank and died on the night of the 19th.

Post-mortem by Dr. Lambert, one of the senior assistant physicians, 29 hours after death.

Body well nourished; cadaveric rigidity well marked; greenish yellow discharge from the nose and mouth; no discharge from the vagina.

Head not examined. *Chest*: Lungs healthy; right slightly adherent laterally and posteriorly; heart weighed about 9 oz., tissue firm, valves healthy, right auricle and ventricle moderately distended with blood, left auricle and ventricle nearly empty.

Abdomen contained about two gallons of a turbid brownish fluid; near the symphysis pubis there were also several flakes of false membrane. *Intestines* moderately congested, no signs of general peritonitis being present. *Liver* rather soft, and apparently fatty, as indeed it proved to be under the microscope. *Kidneys* presented no appearance of interest, microscopic or otherwise. In the left iliac fossa there was an abundant infiltration of lymph.

Uterus. This was removed entire, and taken by me to Prof. Clark for examination. It presented externally no marked evidences of peritonitis, and was firmly contracted.

In the median line posteriorly, just above the junction of body with the cervix, was a perforation about the size and shape of the button-hole of a waiscoat. The edges were clean. Extending downward from this in the mesian line of the posterior wall, *internally*, for about one inch, was a solution of continuity, involving about one third of the thickness of the organ. Anteriorly in the mesian line was a loss of structure, similar in character, but less extensive. The uterine sinuses displayed coagulated blood when laid open.

No other injury to structure was observable, and these were, it will be noticed, just at the points where pressure was experienced from the head on the promontory and symphysis.

Microscopical examination.—Careful examination by Dr. Clark, decided these solutions of continuity to have resulted from pressure and not from laceration, and therefore there was true perforation (not rupture) from death of tissue. The fluid lining the inner uterine wall, displayed pus, under the microscope, and on carefully removing some fluid from the uterine sinuses, with clean instruments, and from fresh incisions, perfectly formed pus globules were found in great numbers. To the naked eye, these sinuses did not appear to contain pus.

Beneath the peritoneal covering of the broad ligaments, in places pointed out by Dr. Clark, pus was detected with the microscope. On dividing the fallopian tube, pus could be readily squeezed from the cut end.

Pelvis.—This, with the uterus, was shown to the Pathological Society, and proved to present the recognized deformity. The antero-posterior diameter of the brim, measuring three inches; *and the promontory being noticeably sharp*, as well as turned a little to the right.

Post-mortem examination of child.—In removing the scalp, a portion (about two inches in diameter), overlaying the external angular process of the frontal bone, and parts adjacent, which had been pressed against the sacrum, was found infiltrated with blood. Rather less than one drachm of blood was effused between the dura mater and the upper part of this (the left) parietal bone. Dura mater not markedly congested. Pia mater congested. On removing the brain, a large clot of blood, weighing about one and a half ounces, was discovered beneath the cerebrum on the left side, encroaching on the cerebellum.

REMARKS.—Among the interesting questions connected with this case, there is no one more so to me than the consideration when the destruction of uterine tissue commenced? There is always an impression left on the mind of an observer which he conveys with difficulty to a reader, and I have the belief that the symptoms present on the morning of the 17th denoted commencement of this injury, and called loudly for immediate delivery. And also that the effect of the ergot in the case, *per se*, would not have been sufficient to have alone determined this accident. Although the exhibition of this medicine did not obtain my hearty concurrence, on account of the dangers signalized by Dr. Trask, in this deformity, as well as from my dislike to any delay, yet I recognized the bare possibility of this additional force moulding the head through the pelvis.

Diagnostic value of uterine discharges.—It is to be hoped that in the progress of science, the value of these dark-brown, green, and olive-green uterine discharges will be duly estimated, whether they indicate the commencement of endo-metritis, and how far it is desirable to allow them to proceed? I cannot recall a case where the vaginal discharge was so healthy, the uterine discharge so different, and the recognition only effected after the os had been well separated from the head for the operation.

If the operation could have been decided upon when first proposed, I was decidedly in favor of delivery with forceps, from a growing reluctance to substitute pelvic for cranial presentations, and from a growing doubt whether the reasoning of Dr. Simpson, in favor of diminished danger to fœtal life thereby, will stand the test of time.

Mode of delivery.—In the present case, a towel was well secured between the handles, so as to obviate compression, and the traces of the instrument were very slight; the operation not very difficult, and as it will be noticed, the blades were applied over the left brow and the right occipito-parietal region, clearing completely the well-marked depressions described, under which so much effusion took place.

How readily these effusions may occur, can be seen in the case of premature labor, recorded by me in a recent number of this Journal.

Case.—Forceps—Puerperal fever—Bronchitis—Death from uterine hemorrhage 11½ days after delivery—Child did well.—The following report is prepared from the notes of Drs. J. R. Buist, of S. C., and Dr. Geo. S. Hardaway, of Ga., now House Physicians in Bellevue Hospital:

Mary Conroy, aged 26, unmarried, fell in labor at 5, A.M., Oct. 28th, 1857. The second stage lasted eighteen hours, and during the last fifteen, the head was retained in the brim by the promontory. The pains were and had been efficient; head in first position; olive-green discharge from vagina; fœtal heart beating very rapidly.

Operation.—Under these circumstances, Dr. Buist sent for me, and the woman having been brought under the influence of chloroform, I delivered her with forceps of a living child, weighing ten pounds, twenty-nine hours after commencement of labor. *The child subsequently did well.*

Subsequent management of case.—October 31st.—Until to-day the woman's condition has been satisfactory; but now lochia suppressed, tender abdomen, flushed face, frequent pulse, moist tongue.

Dr. Buist ordered turpentine stupe to abdomen, and warm fomentations to vulva.

November 1st.—Chill, pulse 135; skin hot and dry. Quarter of a grain of the sulphate of morphia, and ten drops of the tincture of veratrum viride every two hours.

Nov. 2d.—Better in forenoon, but in the afternoon pulse again became very frequent, and she appeared much worse. Medicines had been continued; 6 P.M., transferred to the fever ward; service of Dr. Macready. At this time she had dusky flush of face; pulse 140; respiration 36, thoracic; tongue dry and coated brown; abdomen immensely distended, and very tender to the touch; lochia very fœtid; no secretion of milk; lips dry and cracked, sordes on teeth, loose green discharges from the bowels.

Ordered, opium one grain, quinine two grains, every two hours, with ten drops of the tincture of the chloride of iron, at the intermediate hour. Whisky, ℥ss. every hour. Diet, beef-tea, and soft-boiled eggs.

Nov. 3d.—Tongue not so dry, otherwise condition about the same. A blister 6 x 8 applied to abdomen, and then dressed with mercurial ointment. 5 P.M., pulse 134; tongue moist; diarrhœa checked.

Nov. 4th.—Forenoon, pulse 130. Patient did not like the whisky; Madeira wine substituted. 5 P.M., pulse 140, tongue dry, no lochial discharge. ℥ss. wine every half hour.

Nov. 5th.—Pulse 124; respiration 26; tongue dry. Very restless, wanted to sit up; slightly ptyalised. 6 P.M., pulse 140. Nates and lower part of back red and much irritated by the discharges, as though bed sores were about to form.

Nov. 6th.—Looks something better. Wine not being good, ordered in its stead ℥ss. brandy in milk every hour. Reddened skin, painted with collodion. Simple cerate substituted for mercurial ointment. Other treatment continued.

Nov. 7th.—Pulse 124; tongue dry.

Nov. 8th.—Pulse 128. Patient does not look so well, and has considerable bronchitis. Brandy, ℥ss. in milk punch, every half hour. Turpentine stupes to chest. Other treatment continued. The natural lochial discharge has reappeared.

Nov. 9th.—Pulse 124; tongue dry; respiration natural. Patient looks better. Bowels opened for the first time in two days.

Afternoon.—Lochial discharge rather free, though not considered as an unfavorable symptom.

4.40 P.M.—Dr. Hardaway sent for, as the patient had a chill; pulse 200.

5 P.M., pulse 180, Verat. Viride, gtt. x.; 6.30, pulse 140, V. V. gtt. x.; 7.30, pulse 124, V. V. gtt. x.; 8.30, pulse 128, V. V. gtt. x.

Death.—8.45 P.M.—Dr. Hardaway was called to the patient, and found her blanched and pulseless. There was uterine hemorrhage, and the blood had run to the foot of the bed, and on to the floor. The vagina was plugged, but she died almost immediately.

The excitement of pulse which came on in the afternoon, seemed to be of a nervous character, and not associated with any renewed inflammatory action. An autopsy could not be obtained.

REMARKS.—The interesting paper on secondary uterine hemorrhage by Dr. T. F. Cock, published in the July number of this Journal, may be referred to with advantage in connection with this subject. Without the data obtainable from post-mortem examination, it would be useless to theorize on the causes of this untoward and rare accident, without the supervention of which it was considered probable that the danger had mostly passed, and that the patient bade fair to recover.

It is certain, however, that there was no reason for assuming that it arose from any retained portion of placenta, membranes or clot.

43 West Thirty-second street.

ART. II.—*Report of a Case of Hydrophobia, with Remarks.* By GEO. A. PETERS, M.D., Physician to the Nursery and Child's Hospital, etc., N. Y.

ON Thursday, May 21, 1857, at 4½ o'clock, P.M., I was requested by Mr. A. to visit his coachman, whom he said was suffering from rheumatism.

On reaching the house I found John S——n; born in England; æt. 39 years; height, 5 feet 8 inches; average weight, 156 pounds; ruddy complexion; a bountiful head of black hair; eyes dark; giving the impression of a stout, hearty man. Had been six years a resident in this country, and had always borne a good character for sobriety and evenness of temper.

On being questioned, he complained of what he called "rheumatism pains," in his right arm, shoulder, neck and chest. These pains he described as paroxysmal and lancinating in their character. The joints were not swollen, and upon further investigation, I found that the pain followed pretty accurately the course of the median nerve from the wrist upward, and was quite severe in the axilla and at the nape of the neck, where there was tenderness on pressure over the fifth cervical vertebra. The spot where the pain was most intense, was upon the anterior portion of the chest, immediately to the right of the sternum; extending over a space of about the size of the palm of the hand, from the clavicle downwards. There was no glandular swelling in the axillæ. The pulse was 84 beats in the minute; respiration 40; tongue moist, and slightly coated; breath offensive; expression of the eye brilliant; pupil natural, and acting well; mind clear, and manner quite composed; answering all questions intelligently and with readiness.

On further inquiry, I found that he first complained of pain in the neighborhood of the right wrist, on Wednesday, May 20th, immediately after returning from the butcher's shop, where they had been discussing the case of a young gentleman in the neighborhood, who had been recently bitten by a dog, supposed to have been mad. At that time he threw himself down upon a bench in the kitchen, and said that he felt pain in the situation indicated above, where he had been bitten by a dog, in the latter part of August, 1856. No attention was paid to his complaints, and during the balance of the day, he attended to his duties. Wednesday night he was restless and not able to sleep well, complaining of these pains in the arm and shoulder; he also found himself unable to swallow water without bringing on a spasm, and a sensation as of impending suffocation; experienced the same difficulty with tea and coffee.

On the morning of Thursday, he fed his horses, but was unable to use a pitchfork, on account of a lameness of the right arm. After having attended to this duty he retired to his bed, the pain and discomfort increasing throughout the day, and the attempt to swallow water still exciting the same spasmodic action, until the afternoon, when I first saw him.

I now presented to him water in a tumbler, but he appeared very apprehensive, and said, positively, that he would not attempt to drink from the glass. I then offered him some in a teaspoon, and after much persuasion he clutched it convulsively, and with great difficulty swallowed a little. Blowing gently in his face, excited these same paroxysms, as did also touching his face lightly with my fingers. He was able to bear the full light of day streaming through the windows, and was not annoyed by the reflection from a mirror which hung upon the wall opposite his bed. Neither rustling of paper, nor the pouring of water from one vessel into another excited him.

Recognizing rabies, I requested Mr. A. to send again for his family physician, Dr. Abram Du Bois, and as the patient's bowels had not been moved for two days, I gave him five compound cathartic pills.

Dr. Du Bois arrived at 8 o'clock P.M., and after investigation, confirmed my diagnosis, and we agreed to attend the case together.

On the anterior surface of the right forearm, two inches above the wrist-joint, we found a simple white linear cicatrix, about an inch in length; we also found another one of about half that size, and similar in appearance, upon the posterior aspect of the limb, just above the styloid process of the ulna. I immediately incised freely these two cicatrices, and cauterized with nitric acid. The reflection from the bright blade of the knife excited spasm, although the incision and application of the acid caused no complaint.

A grain of opium was then given him, in the form of a pill, and we determined to push the anodyne during the night.

At 10 o'clock P.M., I saw him again, and administered one grain of the sulphate of morphia, rubbed up with sugar, and placed dry upon the tongue. Also ordered a blister, 3 × 3 inches, over the epigastrium, so that we might have a surface for the endermic application of morphia, if he should reject its exhibition by the mouth. Ordered him beef-jelly for nourishment.

Visit, 12 o'clock, midnight; pulse 84; respiration 28. Has taken since 8 o'clock, three one-grain pills of opium, and one grain of the sulphate of morphia. Pupils not affected. Ordered the pills to be continued every hour or two hours, according to the effect produced. His wife states that when about to apply the blister, she attempted to wash the surface with a sponge and water, but was obliged to desist, as it threw him into a violent spasm. Has rather an anxious look, and complains of an increased secretion of saliva, the effort to swallow which (for as yet he does not expectorate), causes a partial spasm.

Visit, Friday, May 22d, 5 o'clock A.M.; pulse 76; respiration 28. Since my last visit, has taken five one-grain pills of opium, but has had scarcely any sleep; only an occasional doze, the longest of which was this morning between three and four o'clock, when he slept for fifteen minutes. Pupils not contracted; surface of skin rather warmer than before. Respiration will go along quietly for a short time, and then there will be a sob or catch. Noticed for the first time, while feeling his pulse, a short spasm, accompanied by forcible expectoration. During the night he drank, with much difficulty, four teaspoonfuls of water. Complains of great pain and stiffness of the neck and under the angle of the jaw. Administered another grain of sulphate of morphia, and ordered a grain pill of opium to be given every hour.

Visit 10 o'clock, A.M. Dr. Du Bois present. Pulse 88—full and of good volume. Respiration 24. Tongue still lightly coated, and breath offensive. Since my visit at 5 o'clock, he had taken three opium pills. Wife says he has slept quietly for half an hour. The disease is evidently progressing. The spasms are of longer duration, and more easily excited. They are now induced by the pouring of water and by the reflection from the surface of a mirror.

Holding the hand so as to shade the eye for an examination of the pupil, brings on a decided spasm, and excites him to anger. As yet, the rustling of paper produces no effect upon him.

Ordered a half grain of the sulphate of morphia every hour. The blister is raised and dressed with unguentum basilicon, to keep it open. Bowels have been lightly moved twice. No meteorism.

Visit 2½ o'clock, P.M. Pulse 84, hard and incompressible. Respiration 29. Spasm produced by the effort to protrude the tongue for inspection. While I was present, he had one short spasm, with expectoration. His wife says that he has had two similar ones this forenoon. Pupils more contracted and sluggish. Has had a quiet sleep for twenty minutes. Says that the powders make him "flighty" when he attempts to doze. Has taken some of the beef-jelly, but when it is presented in a spoon, he has a spasm, and receives it into his mouth with difficulty. He expresses himself by saying that after it gets into the back part of the mouth, he swallows easily enough.

Urine, fair in quantity, but turbid; brought away a specimen for examination. Has taken, since last visit, two and a half grains of sulphate of morphia.

Visit, 5½ P.M. Pulse 104. Respiration 22. Manner more excited; has been talking wildly since last visit. Complains of noises in the street. Has had one spasm, with expectoration. Both sterno-mastoid muscles tense and hard. Since last visit, has taken one and a half grains of sulphate of morphia.

Visit, 8 P.M. Drs. Du Bois and Alonzo Clark, present. Pulse 124. Respiration 20. Manner quite excited. Has taken one and a half grains of sulphate of morphia since last visit. As the spasms seemed chiefly respiratory, at the suggestion of Dr. Clark, a blister to the nape of the neck was ordered. Rigidity of sterno-mastoid muscles scarcely observable. Spasmodic action much less marked than at the previous visit; the pouring of water failed to excite it, and a spoonful of jelly offered to him was swallowed with more ease than at any time during the previous twenty-four hours.

Visit, 11½ P.M. Pulse 144, feeble, but exhibits no irregularity in its rhythm. Respiration so convulsed and interrupted, that I could not count it. Since last visit, has been very uneasy, tossing upon the bed, and expressing a desire to walk about the room. Pupils more decidedly contracted; adnata injected. Countenance flushed; face and neck bathed in perspiration; palms moist; the surface of the rest of the body hot and dry. Tongue thickly coated with a white fur. Countenance anxious; muscles of the neck soft and natural to the feel. Intervals between the paroxysms of choking very brief. Speaks in an abrupt, jerking way. Says he has no pain anywhere, and shall be able to go to work to-morrow. Is continually spitting up tough, frothy mucus, and imagines that if he should lie back upon his pillow, the accumulation in his throat would choke him. Has taken one and a half grains of sulphate of morphia since last visit.

Saturday, May 23.—Visit, 2½ A.M. Was called out of bed to see him. Soon after last visit, he became greatly excited, and very restless, was kept in bed with difficulty and by much persuasion. His mind is occupied with an infinite variety of fancies. Treats those about him rudely, and then immediately apologizes. Pulse very small and rapid, cannot be counted owing to his continual jactitation. Constant spasmodic spitting of mucus, in large quantity. There is also frequent vomiting of coffee-ground material, coming up in gulps, several ounces at a time. Pupils dilated and oscillating. Since last visit has taken one and a half grains of sulphate of morphia, but now refuses to take any more, neither can he take nourishment. Milk-punch offered to him, brought on an epileptiform convulsion of short duration. All the above symptoms increased in intensity, and at 5 A.M. he became much offended with me; I left him to procure rest. From 2½ to 5 o'clock about two grains of morphia were sprinkled upon the blistered surface. He complained of no pain.

Returned to him at 9 A.M. During my absence, he had had two or three epileptiform convulsions; was perfectly rational; said that I had returned just in time to see him die; that he was very glad to see me; thanked me for my attention; and begged pardon for his rudeness. Was now seized with a convulsion, extreme dilatation of the pupils, frothing at the mouth, and carpo-pedal spasms.

The convulsion passed over him, and he died quietly and with a placid expression of countenance at 9¼ o'clock A.M.

For good and sufficient reasons, no post-mortem examination was obtained. This I regret, because without it the case is less complete.

Prof. Alonzo Clark was kind enough to examine critically the matter vomited, and also the urine. The following is his report:

"*Matter vomited* was of a deep green color, slightly flocculent and viscid. It furnished, on standing, an abundant sediment. The sedimentary matter consisted of, 1st, abundance of oil globules, large and small; 2d, fine granular matter; 3d, a great number of small cells, but little larger than blood corpuscles (from the deep crypts of the stomach), some of which were fatty, some granular; 4th, other cells of two and three times the diameter of the last, nearly all granular; still others from œsophagus and mouth, but there was no columnar epithelium from the free surface of the stomach; 5th, a considerable number of small bodies which look like contracted and deformed blood corpuscles; 6th, a few unaltered blood corpuscles; 7th, hematoidine in three different forms—globular aggregations of a deep brown color; amorphous aggregations also deep brown, and the black pliable scales of small size; 8th, some hematine partly diffused and partly staining the cells above named.

"Acetic acid produces no important changes in any of these constituents, except the unaltered blood corpuscles. The reaction of the fluid was acid.

"*The urine* had an acid reaction after standing two days. It gave a very intense brownish red color when treated with excess of nitric acid. The quantity was not enough to permit the specific gravity to be taken. Boiling produced a cloudiness which disappeared on the addition of nitric acid. Ammonia also produced a cloudiness, showing that the phosphates were abundant, though not perhaps excessive. The precipitated sediment contained no casts, and no complete kidney cells, either healthy or diseased; but nuclei from some of these cells were seen. It contained some large flat epithelium from the bladder, and a few oil globules. The saline constituents were lozenge shaped crystals of uric acid, urate of ammonia, and a few crystals of oxalate of lime. An abundance of non-beaded, thready, unbranched vegetable growth, wavy and coiled, was rapidly produced in the fluid."

This case occurred under circumstances peculiarly favorable for observing the cause, symptoms, progress, and duration of the disease. It has fallen to my lot to have observed five cases of hydrophobia, four of which have been in hospitals, where the noise and bustle, occasioned by the frequent visits of those curious to see this rare disease, must unavoidably greatly excite the patient, and frequently hurry on the fatal termination.

Our patient, however, was, from the first, sedulously guarded from all extraneous causes of excitement; was kept in a large airy apartment, into which none were allowed to enter, except those actually required to administer to his wants. His wife, to whom he appeared greatly attached, was with him constantly. During the progress of his malady, we were enabled to arrive at several interesting facts.

He was bitten by a strange dog, in the latter part of August, 1856. Of the subsequent history of the dog, nothing definite is known. The wound was very slight; he called upon a physician, who, after allowing it to bleed freely, dressed it with adhesive plaster, and it healed by first intention.

The affair caused him no uneasiness, and it escaped his mind, until the recollection of it was revived by the circumstances mentioned at the commencement of the narrative. Fear, therefore, appears to have been the active exciting cause, although it is a singular fact that, until within a few hours of his death, his mind was hopeful; and, although the cicatrices were incised, he appeared to think that they had no connection with his attack, and continually cheered his wife with the assurance that he should soon recover. Never but once did he inquire whether we had any suspicion that he was suffering from hydrophobia, and seemed very willing to receive the evasive answer given. Towards the last, however, he became despondent, and spent much of his time in prayer and exhortation.

The period of incubation extended over about nine months. The average duration of this period, as shown by the tables, is from the fourth to the fourteenth week after inoculation. No visible change had taken place in the cicatrices, nor did we observe any appearance of inflamed absorbents radiating from them; he merely complained of intense shooting pain, commencing in their neighborhood and extending upwards.

As early as the Monday preceding his seizure, he was observed to be somewhat "nervous in his manner," and replied sharply to a reasonable request. He also expressed great unwillingness to wash the carriage after returning from a muddy drive, but was unable to give any reason for it, except that he did not feel comfortable while working in the water. On the night of Wednesday he began to be very restless and excited, and was unable, as we see by the record, to swallow water without exciting spasm. We may, therefore, consider the prodromic stage as extending over a period of from two to three days.

Of the symptoms present in this case, the most marked was the spasmodic action of the muscles about the neck and chest, brought on by the effort to swallow fluids; solids also provoked this same action, although to a much less extent; as did also various manipulations described in the notes. Except in the very last stage of the disease, when the epileptiform convulsions supervened, the spasmodic action did not attack the limbs, for in some of his severest paroxysms he would spring from the bed and cling to some object in the room, as if for protection. Did not complain of excessive thirst. At no time did the patient give utterance to any sound which might be compared to the barking of a dog, nor did he show any disposition to injure those about him. He was not delirious, except during the last hours of his life, and then only for a few moments at a time. His insomnia was intense, and the anodynes, administered in large quantities, procured for him but little sleep.

The vomiting which occurred in this case, I also find mentioned in several recorded cases, although the text-books do not, I believe, allude to it. The analysis of the fluid vomited will be found appended to this report.

The disease may be said to have declared itself during the night of Wednesday, the 20th. Consequently, its duration may be fairly estimated at about sixty hours.

During its entire continuance, we allowed his wife full and free communication with him, even to imprinting a farewell kiss upon his lips, believing that no harm would follow, as there is stated to be no well-authenticated instance on record of the communication of this disease by man to man.

With reference to the treatment I would say a few words. Unfortunately, proper prophylactic treatment—such as excision of the wounds, the application of cupping-glasses, and strong cauterization—had been neglected in this case. These means, when thoroughly carried out at an early period after the inocculation of the virus, very generally succeed, by completely removing the nidus of the poison. Knowing from our own observation, and the recorded experience of others, how varied, and how uniformly ineffectual has been the treatment employed in this disease, we determined to avoid all complicated and heroic methods, and simply to push the use of opium to an extent which, if possible, should control the intense nervous excitement and induce sleep.

The quantity given during the thirty-seven hours in which he was under treatment, was ten and a half grains of the sulphate of morphia, and eleven grains of solid opium, administered by the mouth; after which, two grains of morphia were used endermically. As I superintended in person the administration of most of the above quantity, I am enabled to say that comparatively little of it was rejected by the stomach. We see that this amount of anodyne produced but little sleep, although I doubt not that its exhibition, together with the absolute quiet which was observed, added much to his comfort and diminished his sufferings.

I should have been disposed to recommend the inhalation of the vapor of chloroform, had not the knowledge of its effects, in the last case of hydrophobia which came under my notice, convinced me that it were safer to allow a patient to die from the disease than to incur the hazard of killing him with the remedy.

Through the kindness of my friend, Dr. George T. Elliot, Jr., I am enabled to present his notes of a case seen by us at the hospital nearly ten years ago.

"An Irishman, aged thirty-two, a plasterer by trade, was admitted into the New York Hospital on Monday, October 23, 1848. He had been bitten by a dog in the month of February last, in both thumbs. The animal was instantly killed by his master, although he had not exhibited any symptoms of hydrophobia. One of the wounds healed kindly, but an abscess formed in the other thumb. Since that time he has experienced pain at intervals in the cicatrices. He is emaciated, of an irritable constitution, and has been much excited of late by a dispute with his employer.

"On Friday evening, October 20th, he was attacked with symptoms of catarrh and sore throat, which gradually augmented in severity, till on Sunday evening he suffered from a sense of constriction across the chest, and while at the tea-table, first evinced the characteristic antipathy to liquids.

"He was admitted into the house the next morning, and was treated for the catarrh. The liquor ammonia acetatis was prescribed, but it was impossible to induce him to take more than one or two doses. Enemata of assafœtida were then resorted to, the true condition of affairs being surmised.

"Saw him on Tuesday, the 24th, when he was rational, but with an anxious and restless look. His pulse was good; appeared to be conscious of the terrific nature of his malady, and to be endeavoring to solace himself with the conviction that it was but 'nervousness,' and chancing to overhear a gentleman questioned as to the time when the wound had been inflicted, he hurriedly exclaimed, 'Don't mention it for God's sake!'

"By his side was a plate containing some solid food, of which he had been sparingly partaking, and a bowl of soup, by the proximity of which he did not appear to be affected.

"At intervals he would be disturbed by an effort at deglutition, which resembled that of one endeavoring to refrain from vomiting. The viscidity of the mucous secretion of the mouth and fauces was evidently increased, and he would endeavor at intervals to expectorate it by hawking.

"He was not agitated by a draught of air, nor by reflected light, though the temperature of the room, and the tempered light, prevented him from experiencing much of either.

"One of the gentlemen present offered him a spoonful of the soup, when the dysphagic effort increased in frequency and difficulty, while the head was averted and the hands elevated, as though to motion away some dread apparition; and on the gentleman's persistence, he fairly threw the clothes from the bed and hurriedly endeavored to arise, but on being calmly reasoned with and coaxed, he swallowed, with much effort, a spoonful at a gulp.

"During the previous night he had been very restless, alarmed, and unwilling to be left alone. He was very talkative to-day, and foamed at the mouth, as I have been informed. In the evening there was a remission of the symptoms, and he suffered his body to be partially sponged. But continuing to sink, he died on Wednesday, the 26th, at 9 A.M., having vomited some matter resembling coffee-grounds a short time before.

"An autopsy revealed the viscera in a healthy condition, though there was slight congestion of the encephalon and the medulla spinalis."

In this case the period of incubation was about eight months. No efficient prophylactic treatment was adopted at any time during that period, although he frequently complained of pain in the cicatrices. The prodromes lasted from Friday evening to Saturday evening, a period of two days.

On Sunday evening unmistakable signs of the disease were present; thus we have the duration of the disease about sixty hours.

In these two cases the prodromic stages, and the duration of the disease, were nearly identical. In both, also, the vomiting of "coffee-ground material" is observed, and if my recollection serves me, the same phenomenon was present in all the cases which I have seen.

270 Fifth Avenue.

ART. III.—*Two Cases of Exsection for Caries.* By C. E. ISAACS, M.D., Consulting Surgeon to King's County and Blackwell's Island Hospitals.

Case 1.—*Caries of the lower third of the fibula—Exsection of that portion of the bone—Recovery.*—M——, a girl eighteen years of age, of scrofulous constitution, an inmate of King's County Hospital, came under my notice on the 15th of August, 1857. She had suffered almost constant pain for several months, in the lower and outer part of the right leg. On examination, I found this much discolored and swollen, and presenting several pouting, fistulous orifices, from which was discharged a serous, curdy, and offensive pus. On passing a probe into these sinuses, I could easily detect diseased bone at various points, corresponding to the course of the fibula. The pain in the part gradually increased until the patient, at first reluctant, at length consented to an operation for the removal of the diseased bone. On the 22d of August, assisted by Dr. Turner, Resident Physician of the hospital, and Drs. Ghent and Farley (the patient having been placed under the influence of ether), I made an incision directly over, and parallel with, the longitudinal axis of the fibula, commencing just above the junction of the lower with the middle third of the bone, and completely down to its surface. The muscles and other soft parts were separated from around the bone, and this was then sawn through by a small straight saw, which was passed underneath it, and made to cut from below upwards. The bone was thus divided at the junction of the lower with the middle third of the fibula. The external malleolus was much enlarged from ossific masses and spiculæ, which projected from its outer surface. The interosseous ligaments, and those connecting the malleolus to the astragalus and os calcis, were then divided, and the lower third of the fibula completely removed. By this procedure, the ankle joint was necessarily opened to a large extent, and the lateral, smooth, polished surface of the astragalus, which articulates with the external malleolus, was exposed. The portion of the fibula removed was entirely carious, with the exception of the articulating surface of the lower part of the fibula, and which is naturally opposed to that of the astragalus. This was in a normal condition. The hemorrhage was inconsiderable. The wound was filled with pledgets of very soft lint and a compress, and a few turns of a roller applied. A well padded splint was applied on the inside of the leg and foot, in order to prevent the strong tendency of the foot to turn inwards.

No unpleasant symptoms occurred after the operation. It is now more than five months since it was performed. The pain has entirely disappeared, and the patient can now walk almost as well as ever, and the motions of the ankle joint, both forward, backward, and laterally, are nearly perfect.

From the large opening necessarily made into the ankle joint, by the removal of the external malleolus, I expected that at least some degree of anchylosis would certainly follow this operation. I was therefore much surprised and gratified that this result did not take place.

Case 2.—*Case of caries and exsection of the three first metatarsal bones—Recovery.*—J. C., æt. nineteen years, of good constitution, a resident of Shark River, New Jersey, was brought to my office on the 28th of September, 1857, on account of an injury of his foot, which he had received one year previously. He informed me that at that time a horse had stepped upon his foot, in consequence of which it became severely inflamed, and that since that time he had had more or less pain in it almost constantly, and had been unable to walk, or indeed even to put his foot upon the ground.

He had kept the leg constantly flexed upon the thigh, and almost always nearly at an acute angle. As a consequence, the tendons had become contracted, and I could not succeed in straightening the limb by any reasonable amount of force. The anterior half of the foot was of a dark red color, much enlarged, with numerous fistulous openings over the metatarsal bones, and which, when examined with the probe, were all found to lead to carious bone.

The amount of disease in these parts seemed to be so considerable, that my first impression was in favor of amputation, by Lisfranc's operation, but after more minute examination, I concluded that it would be more judicious to endeavor to save the foot, by exsecting only the bones which were actually diseased. Accordingly, the next day (29th), assisted by Drs. Cullen, Enos, and Drake, the patient having been placed under the influence of chloroform, I made an incision on the inner side of the foot, over and along nearly the whole length of the first metatarsal bone, completely down to its surface; another transverse incision was then made, commencing from the centre of the first, and extending about an inch through the integuments towards the outer side of the foot. The knife was now kept close to the first metatarsal bone, so as to dissect the soft parts completely from around the greater portion of it.

This bone, which was found to be carious, was divided by Liston's forceps, and the posterior part separated by the scalpel from the first cuneiform bone, and removed. The remainder was then taken away, with the exception of about one inch of the anterior extremity, upon which the first phalanx of the great toe is articulated. This portion, being apparently healthy, was preserved. The second and third metatarsal bones, being also much diseased, were entirely removed by cutting through them with Liston's forceps, and then disarticulating their extremities from the second and third cuneiform bones, and from the first phalanges of the second and third toes. A number of irregularly formed masses of ossific matter, which had been thrown out in the vicinity of the diseased bones, was also taken away.

The hemorrhage, which was principally from the minuter vessels, amounted, perhaps, to ten or twelve ounces. Only the external plantar, and one or two small arteries, required the ligature. The wound, which was very deep, was filled with soft pledgets of lint, covered by a compress and a few turns of a roller.

Not the slightest unfavorable symptom occurred during the whole course of treatment. After the wound had commenced to suppurate, I enjoined upon the patient the necessity of making frequent extension of the leg upon the thigh, and of keeping the limb, for a considerable time every day, as nearly as possible approaching the extended position, with the view of overcoming the contraction of the parts about the knee joint. The patient came to see me on this day (December 12th), about two and a half months from the time of operation, having walked nearly half a mile. I found the wound perfectly healed. A cicatrix, about an inch and a quarter in depth, occupies the former situation of the bones which have been removed. The patient states that he is free from pain, but that there is some swelling about the foot and ankle joint whenever he walks much, but that this is daily diminishing, and the power and motions of the limb are constantly improving. He can now extend the leg upon the thigh nearly to a straight position without any difficulty, the contracted state of the parts, about the knee-joint, having almost entirely disappeared.

P. S.—This day (January 27th, 1858) I received a letter from the patient, in which he says: "I am happy to inform you that my foot is getting along very well. The swelling has gone out of my leg, and I now walk around with a cane, and hope I will soon walk without any." He otherwise expresses himself as exceedingly well satisfied with the result of the operation.

ART. IV.—*Fractures of the Clavicle.* By FRANK HASTINGS HAMILTON, M.D., Professor of Surgery in the Medical Department of the University of Buffalo, New York.

FOR the sake of convenience, I shall divide fractures of the clavicle into those occurring through the inner, middle, and outer thirds. By the "outer third" is meant all that portion of the clavicle included between its scapular extremity and the internal margin of the conoid ligament. The remaining portion is intended to be divided equally into two separate thirds. The peculiarities of these several portions, in respect to anatomical relations, liability to fracture, results, etc., will explain the propriety of the divisions.

Causes.—The clavicle is broken, in a large majority of cases, by a counter stroke, such as a fall, or a blow upon the extremity of the shoulder.

Occasionally it is broken by a direct stroke, as when a blow aimed at the head is received upon the shoulder; it is broken sometimes by the recoil of an overloaded gun, especially when the person lies upon the ground with the butt of the gun resting against the clavicle.

Gibson has seen a case in which it was broken in a child at birth, by an ignorant midwife pulling at the arm.*

I have once seen the clavicle broken by muscular action alone. A large, well-built and healthy man, aged thirty-seven, standing upon the ground, attempted to secure the braces of his carriage top with his right arm, when he felt a sudden snap, as if something about his shoulder had given way. He did not, however, suspect the nature of the injury, and did not consult any surgeon until eight days after, at which time I found the right clavicle broken near its centre, but rather nearer the sternal than scapular extremity. The fragments were but slightly, if at all displaced, but motion and crepitus at the point of fracture were distinct. The usual node-like swelling was also present, indicating the existence of a considerable amount of ensheathing callus. He had been unable to raise the arm to a right-angle with the body since it was broken, but he had suffered no other inconvenience from it.

A similar case is reported in the number for January, 1843, (vol. xxxi. p. 212), of the *American Journal of Medical Sciences*, copied from the *Revista Medica*, No. 1841. The subject of this case was a colonel of cavalry, about sixty years of age. In mounting his horse, he experienced a sensation as if something had broken, followed by acute pain in his left shoulder, and on examination, it was found that the clavicle was fractured in the middle. The health of this gentleman had been impaired, it is further stated, by repeated attacks of syphilis.

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* GIBSON: *Principles of Surg. Sixth ed.* vol. i. p. 272.

Malgaigne (p. 464), has recorded three other examples of fracture of this bone from muscular action; and Parker saw a case which was produced by striking at a dog with a whip; the bone had been previously somewhat diseased, yet it united favorably.*

Of these six cases, five occurred on the right side, and always near the middle of the bone, if we except one case reported by Malgaigne, in which the point of fracture is not mentioned. In neither case did the fragments become displaced, only as they were found, in some of the examples, inclined slightly forward.

Pathology.—It has already been observed, in speaking of partial fractures, that this bone suffers an incomplete fracture more often than any other, and that in such cases, the lesion occurs generally in the middle third, or rather to the sternal side of the centre, and in a direction nearly or quite transverse. They are not usually accompanied with much displacement, but if a displacement exists, it is as a slight forward inclination of the fragments.

Fractures which are complete occur mostly after the bones have become firm and unyielding. They are also generally oblique, seldom comminuted, still more rarely compound. The point of the clavicle at which a complete fracture usually occurs, is at or near the outer end of the middle third, and a little to the sternal side of the coraco-clavicular ligaments, near where the trapezius and deltoid cease their attachments. It might be more exact to say, that the fracture extends from this point downwards and inwards, towards the sternum, embracing one inch or less of its entire length. In some cases the obliquity is greater, and the amount of bone involved is much more considerable.

Why the bone should break more frequently at this point, especially in the adult and in the male, it is not difficult to understand. It is smaller here than elsewhere, and less supported by muscular and ligamentous attachments. At this point, also, the axis of the bone begins pretty abruptly to curve forward, and more abruptly in the adult and male, than in the child and female. When, therefore, the clavicle is broken, as it usually is, by a counter-stroke, the force of the blow, conveyed from the shoulder through the outer portion of the bone, is suddenly arrested, and expends itself upon the point where the direction of the axis is changed.

In a record of seventy-nine fractures, including partial fractures and comminuted, the latter of which have always been broken twice, fifty-six have occurred through the middle third, and thirty-six near the outer end of this third. But if we exclude from this analysis all of the partial fractures which occur generally not far from the centre of the bone, the fracture is found to have taken place at the outer end of the middle third, thirty-six times in sixty-two cases. Three have occurred through the inner third, two of which were within one inch of the sternum; and twelve through the outer third.

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* PARKER: *N. Y. Jour. Med.* July, 1852.

A more practical analysis can be based, however, upon the point of fracture with reference to its cause; and I have never seen a complete fracture of this bone produced clearly by a counter-stroke, which was not near the outer end of the middle third.

When the fracture is at this point, or in any portion of the middle third, the direction of the displacement is almost uniformly the same. The sternal fragment is slightly lifted by the action of the clavicular portion of the sterno-cleido mastoid muscle, notwithstanding the resistance of the rhomboid ligament, and the subclavian muscle. On the other hand, the acromial fragment is dragged downwards by the weight of the arm, aided by the conjoined action of a portion of the pectoralis major and the latissimus dorsi, feebly resisted by the trapezius and other muscles from above; by the action of the same muscles, aided by the pectoralis minor, and perhaps by some portion of the subclavius, it is drawn towards the body, diminishing thereby the axillary space, while by the preponderating strength of the pectoralis major and minor, the acromial end of the fragment, with the shoulder, is drawn forwards; the sternal end of the same fragment being rather displaced backwards, and at the same time resting at a point somewhat elevated above its acromial end.

Desault has recorded one example of an overlapping by the elevation of the acromial fragment over the sternal;[*] and Bichat remarks, that Hippocrates speaks of the phenomenon as a thing which was familiar to him. Syme has mentioned a case of this kind which he had seen.[†] Gueretin, Malgaigne,[‡] and Stephen Smith, have each reported an example.[§] In Stephen Smith's case, the fracture occurred in a man thirty-eight years old. The bone was broken through the outer third, and transversely. He was treated at the Bellevue Hospital, but the overlapping, to the extent of one inch, remained after the cure was completed.

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[*] *Desault on Frac., op. cit.* p. 16.

[†] *Amer. Jour. Me'. Sci.*, vol. xvii. p. 251.

[‡] *Malgaigne*, p. 461.

[§] *N. Y. Jour. of Med.*, May, 1857.

In nearly all the cases of oblique fractures occurring through the middle third, there follows immediately an overlapping, varying from one quarter of an inch to an inch, and sometimes, though very rarely, exceeding this. There is a specimen in the Dupuytren Museum, in which the shortening equals one-third of its entire length.

Transverse fractures, wherever they may occur, are not so constantly found displaced, at least in the direction of the axis of the bone, as the following examples will illustrate:

An old lady, aged eighty years, fell down a flight of stairs, breaking the right clavicle transversely, about one inch from the sternum. I saw her, with Dr. Trowbridge, on the day following the accident. Motion and crepitus were distinct, but there was scarcely any displacement. No dressings were applied, but she was directed to keep quiet in bed, and upon her back. In the usual time the fragments had united, without deformity.

A man about forty years old, fell backwards from a wagon, breaking the collar bone near the middle. The fragments were movable, but not displaced. He was treated successfully, and without any resulting deformity, by simple confinement in the recumbent posture during a few days, and after this by suspending the arm in a sling, while he was permitted to walk about.

A young man, aged twenty-six, fell while wrestling, and broke the clavicle at the outer end of the middle third. There was some displacement at first, but the fragments being reduced, were found to support themselves. A cross, secured with straps, was applied to the back, and on the twenty-eighth day the union was complete, and without deformity.

A child, aged three years, fell about six feet, striking upon his shoulder. He was sent to me on the same day, by Dr. G. Burwell. I found the left clavicle broken off completely, about one inch from its scapular end. Crepitus and motion were distinct, but the fragments were not displaced. The arm was placed in a sling, and on the seventh day both motion and crepitus had ceased. The cure was accomplished without any degree of displacement.

The example of a fracture from muscular action, already mentioned as having been seen by me, was also probably transverse, and union has occurred without treatment and without displacement.

Stephen Smith, of New York, has met with two examples of transverse fractures without displacement, in a hospital record of eleven cases. Bichat says Desault has frequently observed the same, it having been seen three times at Hôtel

Dieu, in the course of the year 1787.* Desault thinks, also, that sometimes the fracture, taking place obliquely upwards and inwards, the usual form of displacement is prevented, and apposition is preserved.

If the fracture is near the sternum, and within the fibres of the costo-clavicular ligaments, as in the case of the old lady just cited, the displacement is inconsiderable. I have seen one other similar case in an adult also. Lonsdale mentions a case in a child, three years old, which came under his observation in Middlesex hospital,† which he regarded as a separation of the epiphysis; this bone, however, has no epiphysis, properly speaking, being formed entire from a single point of ossification. Malgaigne mentions two other examples, in one of which the fracture was so near the sternum that it was difficult to say whether it was not a partial dislocation. The displacement was only trivial.‡ But the only two specimens contained in the Dupuytren Museum offer a considerable displacement, and in both the external fragment is thrown downwards and forwards.

With regard to the amount of displacement usually attendant upon fractures near the outer end of the bone, surgical writers have generally united in declaring that it was in a majority of cases very inconsiderable, while some have even affirmed that there would be found no displacement whatever; neither of which opinions, according to the recent observations of Robert Smith, of Dublin, are strictly correct. He has examined eight specimens of fracture of the outer extremity of the clavicle, contained in the museum of the Richmond Hospital School of Medicine; three of which were broken between the conoid and trapezoid ligaments, and are united with very little displacement, while the remaining five, broken beyond the trapezoid ligament, present a very marked deformity.

The following is a summary of the conclusions to which he has arrived:

"When the clavicle is broken between the two fasciculi of the coraco-clavicular ligament, there is seldom any displacement of either fragment, and always much less than in fracture of any other portion of the bone. When displacement does occur, it is usually limited to a slight alteration in the direction of the bone, by which the natural convexity of this portion of the clavicle is increased.

"The explanation of which facts are found in the attachments of the ligaments from below to the two fragments; and, in the action of the trapezius from above, by which they are antagonized.

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* DESAULT, *on Fractures*, *op. cit.*, p. 15. † LONSDALE, *on Fractures*, p. 206.

‡ MALGAIGNE, *op. cit.*, p. 491.

"But the case is very different when the bone is broken external to the trapezoid ligament. Here the coraco-clavicular ligaments can have no direct influence upon the outer fragment, which is displaced now partly by muscular action, and partly by the weight of the arm, the sternal end of the outer fragment being drawn upwards by the clavicular portion of the trapezius, while, by the action of the muscles passing from the chest, the entire outer fragment is drawn forwards and inwards, so as to bring sometimes its broken surface into contact with the anterior surface of the inner fragment, and placing it nearly at right angles with this fragment, in which position it is generally united. The displacement in this direction, rather than any degree of overlapping, explains also the shortening which existed in all of these cases, varying in the different specimens from half an inch to one inch, and averaging about three quarters of an inch."

Such are the views of Mr. Smith; and I see no reason to call in question their correctness. In my own experience, a fracture occurring in a child three years old, within one inch of the acromial end, probably between the ligaments, was never displaced at all; a second, broken somewhere in the outer third, presented, after many years, no displacement. Two recent cases were displaced each one quarter of an inch, and one old case, half an inch; these three latter cases occurred in adults, and always within an inch of the acromial end of the bone. In one of these last examples, the inner fragment was rather behind than above the outer fragment.

But it would be unsafe to draw conclusions from an experience which is confined entirely to living examples, and in which no dissections have been made, to verify the exact point of fracture, or the precise amount and character of the displacement. So far as they go, however, they seem to me to confirm the general correctness of the observations made by Robert Smith.

It has happened to me only five times to meet with a comminuted fracture of the clavicle, all of which fractures occurred through some portion of the middle third of the bone; the intercepted fragments being from one inch to one inch and a half in length, and lying obliquely, or, as in one case observed by me, at nearly a right angle with the main fragments.

I have never seen a compound fracture of this bone, although, in many cases, the sharp point of an oblique fracture has seemed just ready to penetrate the skin. One case is reported as having been presented at St. Bartholomew's Hospital. It occurred in a boy, fourteen years old, and was produced by his having been drawn into some machinery while it was in motion.*

Lente also mentions a case, seen by himself, occasioned by the fall of a derrick upon the shoulder. The patient, twenty-four years old, was admitted into the New York Hospital in August, 1848. The left clavicle was broken at about its middle, and a large wound in the integuments communicated with the fracture. The fragments united firmly in about six weeks, after several pieces of bone had been discharged from the wound.†

Ayers mentions another case, the result of a severe gunshot accident, in which the bone was also very much comminuted.‡

A double fracture, or a simultaneous fracture, occurring in both clavicles, seldom occurs. I have recorded two cases (*four fractures*, three of which are incomplete), both occurring in young boys.§

Malgaigne says it has only happened to him to see it once in 2,358 cases, at the Hôtel Dieu, and he can recollect only five other examples. And of 158 cases of broken clavicles reported from the New York Hospital, it is stated to have occurred in only four. These gentlemen, however, only report hospital cases, and they have reference, doubtless, to complete fractures; while double fractures, according to my experience, occur more often in children than in adults, and are of the character of partial fractures, without usually much displacement; which facts, if sustained by subsequent observations, would sufficiently explain their infrequency in hospital, and their relative frequency in private experience.

Symptoms.—In all cases of complete fracture with displacement, no difficulty will be experienced in deciding upon the nature of the injury.

The patient is found generally leaning towards the injured side, while the opposite hand sustains the elbow of the same side, to prevent its dragging downwards.

The shoulder falls downwards, forwards, and inwards; while, at the same time, the line of the bone is interrupted by the sharp and projecting point of the sternal fragment.

If the fracture is the result of a direct blow, a swelling and discoloration may be seen at the seat of fracture, but if it is the result of a counter-stroke, we must look to the top or point of the shoulder for the signs of a contusion.

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* *London Med. Gaz.*, vol. ii. p. 382. † Lente: *N. Y. Jour. of Med.*, July, 1850.

‡ Ayres: *Ibid.*, Jan., 1857.

§ *Rep. on Def. after Frac. cases* 5, 6, 10.

The patient also experiences pain when an attempt is made to raise the arm at a right angle with the body, and especially in attempting to carry the arm across the body, by which the ends of the broken clavicle are driven into the flesh. In two cases (cases 19 and 50 of my Report on Deformities), of oblique fracture, accompanied with displacement, occurring in the middle third of the bone, I have particularly noticed that the patients could easily lift the hands to the head, and in one of these cases the patient, a boy, fourteen years old, raised his arm perpendicularly over his head. Such exceptions are not very uncommon.

Crepitus can be detected sometimes by simply pressing down the sternal fragment, but it is almost always present when we draw the shoulders forcibly back, so as to bring the broken fragments into more perfect contact.

If there is no displacement, still crepitus may generally be discovered by grasping the bone between the thumb and fingers, and moving it gently up and down, or by slight pressure upon the point of fracture.

When the fracture occurs close to the acromial extremity, external to the coraco-clavicular ligaments, although, according to Robert Smith, there is usually considerable derangement, yet it is not accompanied with a corresponding amount of external deformity, and its diagnosis will require, therefore, more care and attention on the part of the surgeon.

Prognosis in this fracture deserves especial attention. In no other bone, except the femur, does a shortening so uniformly result. Of fifty-six complete fractures only fifteen have united without shortening; and of fifteen simple, oblique, complete fractures, which have occurred at or near the outer end of the middle third, only one has united without shortening (case forty-six of my Report), and in this case the patient was but fifteen years old, and the fragments were never much displaced, nor can I say that the treatment, a board across the back after the manner of Keckerly, had anything to do with the result. Five cases of complete transverse fracture, occurring at the same point, have united without shortening.

The shortening varies from one-quarter of an inch to one inch, or more, and the fragments are almost always, especially when the fracture is through the middle third, found lying in the position in which we have described them to be at the first —the outer end of the inner fragment being above, and often a little in front of the outer: sometimes, especially in lean persons, and when the fracture is very oblique, presenting a sharp and unseemly projection.

The greatest amount of shortening is generally found in those fractures which occur through the middle third; in fractures near the sternal end there is usually very little permanent displacement; the same is true when the fracture is at the acromial end, and between the coraco-clavicular ligaments, as the observations of Robert Smith, already quoted, have sufficiently established, but if the fracture is beyond these ligaments, the final displacement and deformity may be very great.

The presence of a small amount of ensheathing callus soon after the cure is completed, sometimes increases the deformity. It is rarely seen to encircle the bone completely, but, if present, it appears to be most abundant in the direction of the salient points of the fracture, that is, above and below; so that, unless the examination is made with care, the projecting points of callus which remain, sometimes after many years, may be easily mistaken for an intercepted fragment turned at right angles to the axis of the bone. In the case of partial fracture, reported by Dr. Green, a similar circumstance was observed, but which his natural shrewdness soon enabled him to explain.*

Robert Smith has observed also, that in cases of fracture external to the conoid ligament, osseous matter is freely formed upon the under surface of each fragment, but there is seldom any deposited upon the upper surface of either. These osseous growths, occupying the situation of the coraco-clavicular ligaments, frequently prolong themselves as far as the coracoid process, and in some cases to the notch of the scapula. Still less frequently these osteophytes become fused with the coracoid process, and a true anchylosis exists.

In comminuted fractures the intercepted fragments generally fall off from the line of the other fragments, and cannot easily be restored.

The clavicle being a spongy and vascular bone, usually unites with great rapidity, generally within twenty days. In the fourth example of transverse fracture already mentioned as having been seen by me, the union seemed to be tolerably firm in seven days. Wallace reports one case from the Pennsylvania Hospital, which was cured in eight days, and another in nine days.† Velpeau says the clavicle will unite in from fifteen to twenty-five days; Benjamin Bell, in fourteen; Stephen Smith has seen it firm in fifteen days.

Whatever may be the degree of displacement, or the condition of the system, it is very seldom that it refuses to unite altogether or that the union is ligamentous: and in the few cases found upon record of a ligamentous union, the functions of the arm do not seem to have suffered any serious ultimate injury, as the following example, and the only one which has come under my observation, will illustrate.

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* *Transac. of Amer, Med. Assoc. for* 1855, *case* 13 *of Frac. of Clavicle.*

† *Am. Jour. Med. Sci.* vol. xvi. p. 115.

Edmund Nugent, a stout Irish laborer, now twenty-five years old, was received into the Buffalo Hospital of the Sisters of Charity, in March, 1854. He states that several years before he fell from a horse and broke his left clavicle, at the outer end of the middle third. This was near Cork, in Ireland, and without consulting any surgeon or "handy man," he continued at work, holding the tail of the plough, nor from that day forward did he employ a surgeon, or dress his arm, or cease from his work.

The clavicle presents now the same deformity which nearly all other similar fractures present after what is usually termed successful treatment, except that it is not united by bone. The outer end of the inner fragment rides upon the inner end of the outer fragment half an inch. The ligament uniting the two extremities is so long and firm that it can be distinctly felt, and the fragments may be moved upon each other with great freedom.

In order that we might determine the amount of injury which he had suffered from the ligamentous union, we directed him to lift weights placed on a table before him, while he was seated upon a chair. We ascertained from this experiment that with his left arm he could lift as much, within three ounces, as he could with his right, and he was not himself conscious of any difference. The muscles of the left arm seemed as well developed as those of the right.

Chelius also refers to two cases mentioned by Gerdy and Velpeau, in which, although an artificial joint remained, the use of the limb was but little impaired.*

Ferguson "once had occasion to remove various portions of this bone, which had become necrosed in consequence of neglected treatment. The patient, about twenty years of age, had the right collar bone broken by the fall of a tree; not knowing the nature of the injury, he worked as a reaper for several hours after, violent inflammation, suppuration and necrosis followed; but after the dead pieces were removed he made a rapid and excellent recovery." †

In the case of compound and comminuted gunshot fracture reported by Ayres, of New York, and already referred to, the recovery was remarkable. The man was sixty-two years old, and in excellent health when the injury was received. The clavicle was so extensively comminuted that before the wound closed over one third of the bone had escaped, and yet at the end of one year from the time of the accident the shoulder was perfectly symmetrical with its fellow, without drooping or falling forwards. Dr. Ayres thinks that all of the clavicle which was lost has been reproduced.

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* CHELIUS, *Amer. Ed.* vol. i. p. 603.

† FERGUSON: *System of Practical Surgery.* Amer. ed. p. 215.

A partial paralysis, with atrophy of the muscles of the arm, accompanied also with more or less rigidity and contraction of the muscles, both of the arm and forearm, is, according to my observation, a more frequent result of these fractures.

Mr. Earle has recorded a case of comminuted fracture of the clavicle, in which the nerves converging to form the axillary plexus were so much injured that paralysis of the arm ensued; and it was noticed as an interesting fact, that the patient could not afterwards put her hand into even moderately warm water without the effects of a scald being produced, characterized by vesications, redness, etc.*

Desault saw a case at Hôtel Dieu, in which, although the clavicle was not broken, the force of the blow upon the clavicle was sufficient to produce a severe concussion of the brachial plexus, and paralysis of the arm. A timber had fallen from a building striking upon the external part of the left clavicle. A considerable wound, followed by swelling, pointed out the place on which the blow had been received. No apparatus was applied, and on the third day a numbness and partial loss of the power of motion occurred in the arm of the affected side. Soon afterwards an insensibility came on, and by the seventh day, the paralysis of the arm was complete. It was not until after a tedious treatment that the limb recovered in part its original strength.†

In case 23, of my report to the American Medical Association, which was followed by paralysis of the opposite arm, and spinal curvature, these results were probably due to some injury of the back received at the time of the accident; but one cannot avoid a suspicion that the apparatus, Brasdors' jacket, contributed somewhat to the unfortunate result. No axillary pad was employed, but the straps over each shoulder were buckled so tight that he was compelled to incline his head constantly to the right side. He was unable to lie down, and could only recline in a half sitting posture. This treatment was continued four weeks; and two months after its removal the paralysis and spinal distortion commenced.

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* S. COOPER'S *First Lines.* Fourth Amer. ed. vol. ii. *p.* 323.

† DESAULT *on Trac. and Disloc.* Amer. ed. 14, 1805.

In case 38 also, of the same report, a comminuted fracture, paralysis with contraction of the muscles extending to the wrist and fingers, existed, but whether it was due to the severity of the original injury or to the treatment, could not be satisfactorily ascertained.

Gibson relates a remarkable instance of this kind. A young man was struck on the clavicle by the falling limb of a tree, breaking it into numerous pieces, and bruising the parts so severely as to give rise to violent inflammation. "The fragments had been driven behind and beneath the level of the first rib, and so compressed the plexus of nerves as to wedge them into each other, and by the subsequent inflammation to blend them inseparably together. Complete paralysis and atrophy of the whole arm ensued, and the patient's object in visiting Philadelphia was to submit to an operation, in hopes of elevating the clavicle to its natural height, and taking off pressure from the nerves." Dr. Gibson, however, did not believe that the prospect of success was sufficient to warrant the operation, and the young man was sent home.*

Lizars says the callus is sometimes secreted so profusely, as by pressing upon the brachial plexus, to render the arm paralytic for a time; and he affirms that as a consequence of this pressure he has seen it remain in this condition three months. The statement, however is made in a manner too vague, and needs confirmation.

It will not do to deny, therefore, the possibility of a paralysis as resulting from a concussion of the axillary nerves, produced by a blow upon the clavicle, nor of a paralysis resulting from a direct injury inflicted by the points of the fragments upon this plexus in certain very badly comminuted fractures; but it is certain that these conditions will not satisfactorily explain all of the other examples in which paralysis has followed simple fractures. In some cases it is no doubt due rather to the injudicious mode of using an axillary pad, by means of which the arm is converted into a powerful lever, and thus the brachial nerves are made to suffer from compression along the inner side of the arm itself. In short it must be confessed that it is sometimes due to the treatment alone, and not to the original injury.

Parker, of New York, in a note to the edition of S. Cooper's Surgery, just quoted, declares that he has seen one patient who had lost the use of his arm from the pressure upon the nerves by the wedge-shaped pad, over which the limb was confined, in order to pry the shoulder outwards. Stephen Smith mentions a case of partial paralysis from the same cause. *

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* GIBSON, *Op. cit.* vi. p. 271.

A similar case has come under my own observation. A lady, aged fifty-one years, was thrown from her carriage, breaking the right clavicle obliquely at the outer end of the middle third. During the first three weeks the arm was dressed with Fox's apparatus, which was at no time particularly painful. She was then placed under the care of another surgeon, who, finding the fragments overlapped, applied very firmly a figure of 8 bandage, with an axillary pad, securing the arm snugly to the side of the body: hoping by these means to restore the fragments to their place. The pain which followed was excessive, and notwithstanding the free use of anodynes, it became so insupportable that at the end of fourteen hours the dressings were removed by another surgeon, and Fox's apparatus again substituted. These were also applied much more snugly than at first, and during the four weeks longer that they remained on, repeated attempts were made to reduce the fragments.

Forty-eight days after the accident, she consulted me. The clavicle was then united, and overlapped half an inch. The whole arm was swollen, painful, and very tender, with total inability to move it.

I removed all the dressings, and, during the time she remained under my care, in a private room at the hospital, there was a gradual improvement in the condition of her arm, in respect to swelling and tenderness, but the paralysis did not much abate.

Erichsen thinks he has seen one case of comminuted fracture, produced by a direct blow, in which the subclavian artery was ruptured; great extravasation of blood resulted and the arm was threatened with gangrene. The patient having recovered, however, the diagnosis could not be determined by actual dissection of the vein.†

Since among surgeons some difference of opinion seems to exist as to the practicability of overcoming the displacement in certain fractures of the clavicle, it is proper that I should defend the accuracy of my own observations by a reference to the observations of others.

In nine of eleven cases reported by Stephen Smith, one of the surgeons at Bellevue Hospital, New York, more or less deformity remained after the cure was completed. In the two remaining cases the actual results are unknown.‡

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* *N. Y. Jour Med. May*, 1857.

† Erichsen: *Surgery.* Amer. ed. p. 205.

‡ *N. Y. Jour. Med., May*, 1857, *p.* 382.

"Great difficulty has been experienced in treating this fracture."—*Syme's Principles of Surgery*, p. 266, *Philadelphia Ed.* 1832.

"The indications of treatment are plain, but, unfortunately, not very easily fulfilled."—*Miller's Practice of Surgery*, *3d Amer. Ed. from 2d Edinburgh*, p. 309.

"Fractures of the clavicle will often cause greater trouble than those which are considered of a more serious character, and the utmost pains will not, on all occasions, suffice to prevent a slight prominence of the inner fragment."—*Practical Surgery. By Wm. Ferguson. 4th Amer. Ed. from 3d London*, p. 215.

"Setting of this fracture is easy, yet only in very rare cases is the cure possible without any deformity."—*System of Surgery. By J. M. Chelius, of Heidelberg, with notes by South. First Amer. Ed.* vol. i. p. 603.

"It is considered, also, that the close union of the fracture of the collar-bone depends less on the apparatus than on the position and direction of the fracture; (therefore, in spite of the most careful application of this apparatus, some deformity often remains.")—*Ibid.* p. 605.

The following statements of M. Velpeau are found in a letter addressed to the editor of the *Boston Medical and Surgical Journal*, by J. Willis Fisher, dated Paris, Sept. 16th, 1846.

Mr. Fisher remarks that the report is drawn in part from his own notes, and partly from "the report published in the *Gazette des Hôpitaux.*" It is the annual summary of M. Velpeau's practice at La Charité, for the year ending Sept. 1846.

"The fractures of the clavicle, less numerous than ordinarily, have been only four. They have proved these three often repeated propositions: First, that contrary to to the general opinion, the patients can carry the hand to the head when they have a fractured clavicle. Secondly, that the consolidation of the bones demands only from fifteen to twenty-five days, and not six weeks or two months. Thirdly, that with all the bandage imaginable, we cannot prevent fracture of the two internal and oblique thirds from leaving a deformity." —*Bost. Med. and Surg. Jour.* vol. xxxv. p. 212.*

"Fracture of the clavicle is almost always followed by deformity, whatever may be the perfection of the apparatus and the care of the surgeon."—*Vidal (de Cassis.) Paris Ed.* vol. ii. p. 105.

"Hippocrates has observed that some degree of deformity almost always accompanies the reunion of a fractured clavicle; all writers since his time have made the same remark; experience has confirmed the truth of it."—*Treatise on Fractures and Luxations. By J. P. Desault. Edited by Xav. Bichat, and translated by Charles Caldwell, M. D. Philadelphia,* 1805, p. 9.

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* This is evidently a misprint. Instead of "fracture of the two internal and oblique thirds," the writer means to say, ***an oblique fracture at the junction of the two internal with the outer thirds.***

"As to the reduction of this fracture, it must be owned the same is often easier replaced than retained in its place after it is reduced; for its office being principally to keep the head of the scapula, or shoulder, to which, at one end, it is articulate, from approaching too near, or falling in upon the sternon, or breast-bone, it happens that, on every motion of the arm, unless great care be taken, the clavicle therewith rising and sinking, the fractured parts are apt to be distorted thereby. Besides, even in the common respiration, the costæ and sternon aforesaid, where the other end of this bone is adnected, together with the motion of the diaphragm, rising and falling, especially if the same be extraordinary, as in coughing and sneezing, are able to undo your work, not to mention the situation thereof, less capable of being so well secured by bandage as many others. All which, duly considered, it is no wonder that upon many of these accidents, although great care has been taken, these bones are sometimes found to ride, and a protuberance is left behind, to the great regret particularly of the female sex, whose necks lie more exposed, and where no small grace or comeliness is usually placed." * * * * * —*The Art of Surgery, by Daniel Turner.* Vol. ii. p. 256. *London Ed.* 1742.

"Restituitur facile tractis humeris a ministro posterius, dum simul suo genu locato ad spinam dorsi, dorsum sustentet minister, nam tunc chirurgus folis digitis claviculam fractam reponere potest. *Difficilius autem in reposita sede retinetur,* sed loca cava supra et infra claviculam spleniis implenda."—*Johannis de Gorter: Chirurgia Repurgata,* p. 79. *Lugduni Batavorum.* 1742.

"The reduction of a broken clavicle is not very hard to be effected, especially when the fracture is transverse; nor is it usual for the humerus, with the fragment of the clavicle, to be so far distorted as not to be easily replaced with the fingers; *but the difficulty is much greater to keep the bone in its place when the fracture is once reduced, especially if the bone was broken obliquely.*"—*Heister's Surgery,* vol. i. p. 134. *London Ed.* 1768.

Amesbury, after having exposed the inefficacy of all previous modes of dressing, and especially of the figure of 8 bandage, Desault's, Boyer's, and an apparatus recommended by

Sir Astley Cooper, proceeds to describe his own apparatus and to affirm its excellence. It is, however, not much unlike a multitude of others, and is liable, I have no doubt, to the same objections. But the author thus writes:

"The clavicle bandage, once properly applied, enables the surgeon to resist the action of all those powers which tend to produce displacement, and puts the fractured bone entirely under his control, without being productive of any of those evils which, I have endeavored to show, arise from the usual modes of treatment. I am not prepared to say that every fracture of the clavicle, treated in the manner which I have thought it expedient to advise, admits of being united without deformity; but, I am fully convinced that, if such cases should occur, they will be found very rare. I have had this bandage in use now about eight years, and, in the course of this time, I have used it in a large number of cases, many of which have occurred in the St. Thomas Hospital. The result of these cases has been very satisfactory to myself, and to those surgeons by whom the treatment was witnessed."—*Treatment of Fractures, by Joseph Amesbury*, vol. ii. p. 527. *London Ed.* 1831.

"The direction the fracture takes is generally oblique, and in one place only, more particularly when it is caused by the indirect force; and this obliquity is one great reason why it is so difficult to treat this kind of injury without some slight deformity (*and often a very great one*) existing afterwards." * * * "One satisfactory result in the treatment of fracture of the clavicle is that, although it is very difficult to prevent deformity afterwards, the motion and free use of the limb do not become much impaired; *for the bone is often shortened an inch or more*, and still the limb possesses free motion and strength. This shortening causes the neck of the scapula to fall forwards, and makes the base of it project backwards, giving the person the appearance of having the chest contracted in front, by which the extent of range of action in the upper extremity will be diminished, although sufficient motion remains for the ordinary uses of the upper extremity. Where the fracture occurs in females, in whose dress the clavicle is exposed to view, it becomes an additional object to get the bone to unite as evenly as possible, to guard against the formation of an unsightly lump that will remain forever afterwards. The more the deformity is prevented in these cases, the more credit the surgeon will get for the cure."—*Practical Treatise on Fractures, by Edward F. Lonsdale*, p, 207 *and* 209. *London Ed.* 1838.

M. Mayor, of Lausanne, thinks that up to this day no successful mode of treatment had been devised. "Here every-

thing appears as yet so little determined that each day sees some new propositions and different procedures," etc. He believes, however, that in his simple handkerchief bandage, with straps across *each* shoulder, the indications are most fully accomplished and the most successful results are obtained. If, however, it were to be treated *without* apparatus, the horizontal position, lying upon the back, would, in the end, make the most perfect unions.—*Nouveau Système de Déligation Chirurgicale, par Mathias Mayor, de Lausanne*, p. 384, *etc.*, (*also Atlas, plate* 3, *fig.* 23.) *Paris Ed.* 1838.

Says M. Malgaigne, "The prognosis, considering the trivial character of this fracture, is sufficiently difficult. For, little as may be the displacement, the surgeon ought not to promise a reunion without deformity; and certain successful results, proclaimed from time to time, betray, on the part of those who relate them, the most extravagant exaggerations."—*Traité des Fractures et des Luxations, par J. F. Malgaigne. Tome premier*, p. 473. *Paris Ed.* 1847.

M. Nelaton having spoken of the various plans which have been suggested to retain this bone in place, and of their inefficiency, comes at last to speak of the handkerchief bandage of M. Mayor, and remarks:

"This apparel is very simple; but neither will it remedy the overlapping." * * * * "Of all the apparels which we have passed in review there is, then, not one which fills completely the three indications usually present in the fracture of a clavicle. None of them oppose the displacement; they have no effect, with whatever care they may be applied, but to maintain immobility in the limb. We think, then, that it is useless to fatigue the patient with an apparatus annoying, and, perhaps, even painful; a simple sling, secured upon the sound shoulder, will be sufficiently severe. Nevertheless, as this does not assure so complete immobility as the bandage of M. Mayor, it is to this that we think the preference ought to be given in all cases of fractures of the clavicle, whether accompanied with displacement or not, whether they occupy the middle or the external part of the clavicle. If the fracture presents no displacement, we shall obtain a cure which will leave nothing to be desired. If there is a tendency to displacement, the consolidation will be effected with a deformity more or less marked; *but since this deformity is inevitable, at least with adults, whatever may be the apparel which we employ*, it is evident that the apparatus which causes the least constraint ought to have the preference. We may remark, farther, that this union with deformity in nowise impairs the free exercise of all the movements of the member."—*Elémens*

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"This apparel is very simple; but neither will it remedy the overlapping." * * * * "Of all the apparels which we have passed in review there is, then, not one which fills completely the three indications usually present in the fracture of a clavicle. None of them oppose the displacement; they have no effect, with whatever care they may be applied, but to maintain immobility in the limb. We think, then, that it is useless to fatigue the patient with an apparatus annoying, and, perhaps, even painful; a simple sling, secured upon the sound shoulder, will be sufficiently severe. Nevertheless, as this does not assure so complete immobility as the bandage of M. Mayor, it is to this that we think the preference ought to be given in all cases of fractures of the clavicle, whether accompanied with displacement or not, whether they occupy the middle or the external part of the clavicle. If the fracture presents no displacement, we shall obtain a cure which will leave nothing to be desired. If there is a tendency to displacement, the consolidation will be effected with a deformity more or less marked; *but since this deformity is inevitable, at least with adults, whatever may be the apparel which we employ*, it is evident that the apparatus which causes the least constraint ought to have the preference. We may remark, farther, that this union with deformity in nowise impairs the free exercise of all the movements of the member."—*Elémens*

Sir Astley Cooper, proceeds to describe his own apparatus and to affirm its excellence. It is, however, not much unlike a multitude of others, and is liable, I have no doubt, to the same objections. But the author thus writes:

"The clavicle bandage, once properly applied, enables the surgeon to resist the action of all those powers which tend to produce displacement, and puts the fractured bone entirely under his control, without being productive of any of those evils which, I have endeavored to show, arise from the usual modes of treatment. I am not prepared to say that every fracture of the clavicle, treated in the manner which I have thought it expedient to advise, admits of being united without deformity; but, I am fully convinced that, if such cases should occur, they will be found very rare. I have had this bandage in use now about eight years, and, in the course of this time, I have used it in a large number of cases, many of which have occurred in the St. Thomas Hospital. The result of these cases has been very satisfactory to myself, and to those surgeons by whom the treatment was witnessed."—*Treatment of Fractures, by Joseph Amesbury*, vol. ii. p. 527. *London Ed.* 1831.

"The direction the fracture takes is generally oblique, and in one place only, more particularly when it is caused by the indirect force; and this obliquity is one great reason why it is so difficult to treat this kind of injury without some slight deformity (*and often a very great one*) existing afterwards." * * * "One satisfactory result in the treatment of fracture of the clavicle is that, although it is very difficult to prevent deformity afterwards, the motion and free use of the limb do not become much impaired; *for the bone is often shortened an inch or more*, and still the limb possesses free motion and strength. This shortening causes the neck of the scapula to fall forwards, and makes the base of it project backwards, giving the person the appearance of having the chest contracted in front, by which the extent of range of action in the upper extremity will be diminished, although sufficient motion remains for the ordinary uses of the upper extremity. Where the fracture occurs in females, in whose dress the clavicle is exposed to view, it becomes an additional object to get the bone to unite as evenly as possible, to guard against the formation of an unsightly lump that will remain forever afterwards. The more the deformity is prevented in these cases, the more credit the surgeon will get for the cure."—*Practical Treatise on Fractures, by Edward F. Lonsdale*, p, 207 *and* 209. *London Ed.* 1838.

M. Mayor, of Lausanne, thinks that up to this day no successful mode of treatment had been devised. "Here every-

thing appears as yet so little determined that each day sees some new propositions and different procedures," etc. He believes, however, that in his simple handkerchief bandage, with straps across *each* shoulder, the indications are most fully accomplished and the most successful results are obtained. If, however, it were to be treated *without* apparatus, the horizontal position, lying upon the back, would, in the end, make the most perfect unions.—*Nouveau Système de Déligation Chirurgicale, par Mathias Mayor, de Lausanne,* p. 384, *etc.,* (*also Atlas, plate* 3, *fig.* 23.) *Paris Ed.* 1838.

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"The venerable gentleman who stands at the head of American surgery, and whose manipulations with the roller approach very nearly to the limits of perfection, informed us, in 1824, that he *had never seen a case of fractured clavicle cured by any apparatus, without obvious deformity.*" (Reynal Coates, *Amer. Med. Jour.*, vol. xviii., p. 62. Old series.)*

I need not say that the "venerable gentleman" to whom Dr. Coates refers in this passage, was the late Dr. Physick, of Philadelphia.

Treatment.—If evidence were needed beyond that which has been furnished, of the difficulty of bringing to a successful issue the treatment of this fracture, it might be supplied, one would think, by a reference merely to the immense number of contrivances which have been at one time and another recommended.

A catalogue of the names only of the men who have, upon this single point, exercised their ingenuity, would be formidable, nor would it present any mean array of talent and of practical skill.

All these surgeons, however, have admitted the same indications of treatment, viz., that in order to a complete restoration of the outer fragment, which alone is supposed to be much displaced, we are to carry the shoulder upwards, outwards, and backwards. But as to the means by which these indications can be most easily, if at all, accomplished, the widest differences of opinion have prevailed; and, in the debate, it may be seen that, while on the one hand, no invention has wanted for both advocates and admirers, on the other hand, no method has escaped its equivalent of censure.

Hippocrates, Celsus, Dupuytren, Flaubert, Lizars, Pelletan, and others, directed the patients to lie upon their backs, with little or no apparatus, but generally with the spinal column so supported and lifted with pillows, as that the shoulders would by their own weight fall backwards. S. Cooper and Dorsey also recommend that the patients should be confined in this position during most of the treatment; and, from the account given by Dr. Lente, it may be inferred that a similar plan is generally adopted in the New York City Hospital. "But this result (deformity) rarely happens when the patient has strictly followed the directions of the surgeon, as to position especially, for it is by position more than by any other remedial means, that a good result is to be effected. * * * * * The persevering continuance of the supine position in bed, with the head low, and, if necessary, a pad between the shoulders. This is the treatment uniformly adopted by Dr. Buck, in the hospital, and the results of his treatment are certainly such as to recommend it highly."

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* It is probable that Dr. Physick here referred to complete and oblique fractures of the middle third, or that Dr. Coates has forgotten the precise language employed on this occasion.

Nearly the same method we find recommended by Alfred Post, in 1840, then one of the surgeons of that hospital; the arm being merely kept in a sling and bound to the side, with the patient lying upon his back; and Dr. Post mentions a case treated in this manner, which terminated with very little deformity.*

Dr. Eve, of Nashville, Tenn., and Dr. Eastman, of Broome County, N. Y., have also employed this method successfully;† while Malgaigne declares it the most reliable means of obtaining an exact union.

Albucasis, Lanfranc, Guy de Chauliac, Petit, Parr, Syme, Skey, Brunninghausen, Parker,‡ and very many others, especially among the English, have preferred, in order to carry the shoulders back, a figure of 8, while Desault, Colles, South, and Samuel Cooper, have represented this bandage as useless, annoying, and mischievous.

Heister, Chelius, Miller, Breifeld, Keckerly,§ Coleman,‖ Welch,¶ Hunton,** prefer for this purpose, some form of back-splint, extending from acromion to acromion, against which the shoulders may be properly secured. Parker says that splints of this kind, with a figure of 8 bandage, are "better than all the apparatus ever invented." While Mr. South gives his testimony in relation to all dressings of this sort, as follows: "I do not like any of the apparatus in which the shoulders are drawn back by bandages, as these invariably annoy the patient, often cause excoriation, and are never kept long in place, the person continually wriggling them off to relieve himself of the pressure."

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* *N. Y. Jour. of Med.*, vol. ii. p. 266.

† *Boston Med. and Surg. Jour.*, vol. lvi. p. 468.

‡ Parker: *Samuel Cooper's First Lines. Amer. Ed.* Vol. ii. p. 325.

§ Keckerly: *Amer. Jour. of Med. Sci.*, vol. xv. p. 115; *also*, *My Report on "Deformities after Fractures," in Trans. of Amer. Med. Assoc.*, vol. viii. p. 440.

‖ Coleman: *New York Jour. of Med.*, *2d series*, vol. iii. p. 274. *From New Jersey Med. Rep.*

¶ Welch: *Trans. of Amer. Med. Assoc.*, vol. viii.; *My Report on "Deformities after Fractures,"* appendix. p. 441.

** Hunton: *Ibid.; also, New Jersey Med. Rep.*, vol. v. p. 146.

Fox,* Brown,† Desault, and others bring the elbow a little forwards, and then lift the shoulder upwards and backwards. Wattman and Lonsdale carry the elbow still further forwards, so as to lay the hand across the opposite shoulder, while Guillou carries the hand and forearm *behind* the patient, and then proceeds to lift the shoulder to its place.

Thus Desault, Fox, and Wattman accomplish the indication to carry the shoulder back, by lifting the humerus while the elbow is in *front* of the body, and Guillou accomplishes the same indication by lifting the humerus when the elbow is a little *behind* the body. Chelius also says: "The elbow, as far as possible, is to be laid backwards on the body."

Sargent, who believes that with Fox's apparatus "the occurrence of deformity is the exception," and not the rule, and prefers it to all others, has treated three cases by Guillou's method, and is perfectly satisfied with its operation.

Hollingsworth, of Philadelphia, has also treated one case successfully by Guillou's method, and adds his testimony in its favor. But how shall we explain these equal results from opposite modes of treatment? Is the indication to carry the shoulders back, which Fox sought to accomplish by pressing the elbow upwards and backwards, as easily attained by pressing the elbow upwards and forwards? Or are we not compelled to infer that there has been some mistake as to the precise amount of good accomplished by the apparatus in either case? Moreover, Coates,‡ Keal, and others, instruct us that the only safe and proper position for the humerus is in a line with the side of the body, and that it must neither be carried forwards nor backwards.

Paulus Ægineta, Boyer, Desault, Pecceti, Liston, Ferguson, Samuel Cooper, Erichsen, Miller, Skey, Dorsey,§ Gibson,‖ Fox, H. H. Smith,¶ Norris,** Sargent, Eastman,†† recommend an axillary pad, while Richerand, Velpeau, Dupuytren, Benjamin Bell, Syme, deny its utility, or affirm its danger. Dr. Parker has seen one patient in whom paralysis of the arm resulted from the pressure upon the brachial nerves, in the attempt "to *pry* the shoulder out;" and I have myself recorded another.

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* Fox: *Liston's Practical Surgery*, Amer. ed., p. 47.

† Brown: *Sargent's Minor Surgery*, p. 132.

‡ Coates: *Amer. Jour. Med. Sci.*, vol. xviii., p. 62.

§ Dorsey: *Elements of Surgery*, vol. i., p. 133.

‖ Gibson: *Institutes and Practice of Surgery*, vol. i., p. 271.

¶ H. H. Smith: *Practice of Surgery*, p. 354.

** Norris: *Liston's Practical Surg.*, Amer. ed., p. 46.

†† Eastman: *Apparatus for Fractured Clavicle*, by Paul Eastman, of Aurora, Ill. *Boston Med. and Surg. Jour.*, vol. xxiii., p. 179.

Cabot, of Boston, Massachusetts, has recommended a mould of gutta percha laid over the front and top of the chest.*

Desault's plan, which took its origin, as Velpeau thinks, in the spica of Glaucius, under various modifications, is recommended by Delpech, Cruveilhier, Lasere, Flamant, Samuel Cooper, Ferguson, Liston, Cutler, Physick, Dorsey, Coates, and Gibson; while by Velpeau, Syme, Colles, Chelius, Samuel Cooper, and Parker, it is regarded as inefficient and troublesome. Says Mr. Cooper: "In this country, many surgeons prefer Desault's bandages; but I do not regard them as meeting the indications, and consider them worse than useless."

The dextrine bandages, or *apparatus immobile*, of Blandin, Velpeau, and others, constitute only another form of the bandage dressing of Desault. In this connection it ought to be noticed that Velpeau does not regard the employment of this apparatus, or of any other demanding great restraint, as imperative. In his great work on anatomy, referring to the fact that when the bone is broken and overlapped, the patient is still able, in many cases, to move the arm freely; "Do not these cases," he remarks, "give support to the opinion of those who admit that fractures of the clavicle do not actually require any other apparatus than the simple supporting bandage." "It is necessary to observe," he adds, "that by thus acting we do not prevent an overlapping,"† etc.

The sling, in some of its forms, is employed by Richerand, Huberthal, Colles, Miller, Fox, Stephen Smith,‡ H. H. Smith, Bartlett,§ Levis,‖ Dugas,¶ Benjamin Bell, Bransby Cooper, Earle, Chapman, Keal, and by a large majority of the English surgeons; while Dr. Gibson declares the *sling* bandage employed so much by the English, "the most inefficient, contemptible, and injurious of all contrivances for such purposes."

No apparatus, perhaps, has been so generally employed, among American surgeons, as that form of the sling introduced by Dr. George Fox into the Pennsylvania Hospital in 1828, since which time no other has ever been used in that institution for the treatment of broken clavicles.

Sargent says of it: "Fractures of the clavicles, treated by this apparatus, are daily dismissed from the Pennsylvania Hospital, and by surgeons in private practice, cured without perceptible deformity."

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* CABOT: *Bost. Med. and Surg. Jour.*, vol. lii., p. 232.

† VELPEAU: *Anatomy*, Amer. ed., vol. i., p. 242.

‡ STEPHEN SMITH: *New York Jour. Med.*, vol. ii., 3d series, p. 384 (May 1857).

§ BARTLETT: *My "Report on Defor."* etc., Appendix; also *Bost. Med. and Surg. Jour.*, vol. li., p. 404.

‖ LEVIS: H. H. SMITH'S *Practice of Surg.*, p. 365.

¶ DUGAS: *Report on Surgery.*

Norris, in a note to *Liston's Practical Surgery*, affirms that "the chief indications in the treatment of fracture of the clavicle are *perfectly* fulfilled by the use of this apparatus."

Smith, in his *Minor Surgery*, declares that Fox's apparatus accomplishes "perfect cures" in very many cases, and that it is "a very rare thing for a simple case to go out of the house (Pennsylvania Hospital) with any other deformity save that which time cures, viz. the deposition of the provisional callus." He has also reported substantially the same opinion in his larger work, entitled "*Practice of Surgery.*"

Such testimony in favor of any dressing demands respectful attention; and I shall not be regarded as detracting from the respect due to these authorities, when I express my belief that it is in deference to the distinguished reputation of the surgeons who have during the last thirty years had charge of the services in that hospital, and who have been so loud in its praise, that the use of this apparatus has, with us, become so general. I believe, also, that, in some measure, this general preference is due fairly to the intrinsic excellence of the dressing. But I must be permitted to express a doubt whether it has made deformities of the clavicle "the exception, instead of the rule," with us. I have used this dressing oftener than any other form, and yet my success has by no means been so flattering as has been the success of these gentlemen. I have seen others employ it, also, and with pretty much the same results. Nor ought it to be forgotten that, in Great Britain, by far the greater majority of surgeons employ an apparatus essentially the same. I have seen it in many of the hospitals, and Mr. Bickersteth, one of the surgeons of the Liverpool Infirmary, informed me, in 1844, that it had been in use with them as long as thirty years. All that has justly been said against the English mode of dressing by slings, is equally true of this; and whatever has been affirmed of the danger of using an axillary pad, applies as much to this as to any other mode of using the same.

I believe, however, that, in the Pennsylvania Hospital, the axillary pad employed is not so large, and, especially, not so thick, as that recommended by Desault, and in this respect it is plainly an improvement; but then, in the same proportion that it is made less thick, it is less powerful to accomplish the indication in question; and if it merely fills the axillary space, then it is no longer a fulcrum upon which the arm is to operate as a lever, but it is only, in its effect, "retentive."

Regarding, then, the importance of this question to the interests of surgery, and observing the wide differences of opinion which are entertained here and elsewhere as to the real value of this dressing, is it asking too much of these gentlemen, that they will present us some more precise statistical testimony? It will be observed that its advocates claim for it what is not to-day, at least, claimed for any other apparatus, viz.: that, under its use in the Pennsylvania Hospital, and in the hands of private practitioners, so far as they have seen, deformities have become the "exception." It is affirmed to answer "perfectly" *all* the indications. By which it must be intended to say, that, in addition to both of the other indications, that also, which has always heretofore been found so difficult, if not impossible, the carrying out of the shoulder, is in a majority of cases perfectly accomplished. The clavicles are not shortened.

If it is intended, however, to say that a shortening is not generally prevented, but only that no unseemly projection or the fractured ends will be found to result, I reply, that then it does not answer *all* the indications, and I beg, further, to suggest that the avoidance of an upward projection seems, to me, to depend much more upon that part of any apparatus which lifts the shoulder, and which belongs to a multitude of other forms of dressing as well as to that in question, than upon that which forces the shoulder out, and it may be accomplished, in a majority of cases, as well without an axillary pad, with a mere sling, as with it. But, in fact, my experience has convinced me that the absence or presence of such a projection, after union, is due more to the circumstances of the fracture, as to whether it is more or less oblique; and still more especially, to the degree of roundness, or emaciation of the patient, than to any form, or part, or condition of the apparatus. It will be found more distinct in oblique fractures than in transverse, and much more marked in thin persons than in plump, or fat persons, and more so in muscular than in non-muscular. In short, I affirm that such a projection has occurred as often under my observation, when this dressing has been used, as it has when other forms have been employed.

Finally, while I deprecate incautious assumptions in regard to the capabilities of any form of dressing for broken collar-bones, a disposition to which is manifested by more than one advocate of special plans, I am ready to bear my humble testimony in favor of that one of whose claims I have taken the liberty to speak so freely, and which is usually known in this country by the name of Fox's apparatus, consisting essentially of a sling, axillary pad, and bandages to secure the arm to the chest, and to which the stuffed collar is a convenient accessory, but admits of various modifications, answering the same ends. Among the considerable variety of dressings which I have used, this, either with or without such slight modifications as I shall presently suggest, has seemed to be most simple in its construction, the most comfortable to the patient, the least liable to derangement (if I except Velpeau's dextrine bandage), and as capable as any other of answering the several indications proposed.

No apparatus is better able to answer the first indication, namely, "to carry the shoulder up," and thus to bring the fragments into line. If, as not unfrequently happens, the outer end of the inner fragment is also carried a little upwards and forwards, it may be, in some measure, replaced by inclining the head to the injured side, or by a carefully adjusted compress and bandage. But it is not probable that any patient will consent to remain a long time in a position so unnatural and constrained; nor is it very easy, as the experiment will show, to maintain a steady pressure upon this portion of the broken clavicle.

The second indication, "to carry the shoulder back," is certainly much more difficult of accomplishment than the first; and it does not seem to me to be fully met by the sling dressing, but, until some mode is devised less objectionable than any I have yet employed, or than any, the mechanism of which I have seen described, I see no alternative but to trust to that action of the muscles attached to the scapula, by which, as Desault first explained, when the shoulder is lifted perpendicularly, it is also in some degree carried backwards, and that, too, it has occurred to me frequently to observe, just as much as when the upward pressure is made with the elbow placed in front of the body.

It is my belief, however, from the evidences now before us, that the third indication, "to carry the shoulder out," still remains unaccomplished; that it cannot be claimed for this, or for any other apparatus yet invented, that, in a certain class of cases which I have sufficiently indicated, constituting a vast majority of the whole number, it is able to prevent a riding of the fragments. Nor, seeing the difficulties in the way, and the amount of talent which has been already devoted to their removal, have I much confidence that this end, so desirable, and so diligently sought, will ever be attained. Yet it is presumptuous, perhaps, to say what the skill and ingenuity of a profession whose labors never cease, may hereafter accomplish.

Having already expressed my preference for the sling, I have only to add what I consider necessary modifications in the form of this dressing recommended by Dr. Fox.

Dr. Coates, in the excellent paper already referred to, (Am. J. M. S. vol. xviii., p. 62), calls attention to the danger of making too much pressure upon the brachial artery and nerves, when the axillary pad is used, and the arm is, at the same time, carried forwards upon the body. In bringing the elbow forwards so as to lay the forearm across the body, the humerus is made to rotate inwards, and the brachial artery and nerves are brought into more direct apposition with the pad. The same objection must hold, only in a greater degree, to M. Guillou's method of carrying the forearm across the back.

The humerus ought then to be permitted to hang perpendicularly beside the body, and thus the nerves and blood-vessels will be removed in a great measure, yet not entirely, from pressure. The pad (to be employed only as a part of the contentive means, and not as a fulcrum) should be firm, but scarcely thicker than is necessary to fill competely the axillary space when the elbow is made to press snugly against the side of the body.

In consequence of having placed the elbow further back than is recommended by Dr. Fox, it will be necessary, also, to vary, in some way, the suspensory tapes; those coming from the humeral portion of the arm-tray must pass in equal numbers, and in opposite directions—before and behind the body—towards the stuffed collar; and each set of front and back tapes, attached to the humeral portion of the tray, must be in pairs, for the convenience of tying. I find it convenient also to secure the arm to the body always by two or three turns of a roller, applied always with great care, so that its pressure shall be in no degree painful or uncomfortable.

An experience, limited to the two following examples, induces me to think, that very many cases would be brought to a conclusion equally satisfactory without any form of apparatus, by retaining the patient a few weeks in the recumbent posture upon the back, as recommended by Hippocrates and others; and to which plan allusion has already been made.

Jan. 2, 1856—Mary Ann S. æt. 24, fell down a flight of stairs, breaking the right collar bone obliquely near its middle. She was unwilling to submit to bandages, and I directed her simply to lie upon her back in bed. On the fourteenth day the fragments had united; and at the end of the third week I dismissed her, with an overlapping of the fragments of less than half an inch, and with scarcely any perceptible deformity.

Alexander Mooney, æt. 33, was admitted to the Buffalo hospital, December 3, 1856, with an oblique fracture of the left clavicle, at the outer end of the middle third. On measurement we found the fragments overlapped nearly half an inch.

In presence of a class of medical students I applied Bartlett's apparatus, a very ingenious and convenient form of the sling dressing, and the same which is now in use at the Mass. General Hospital, in Boston. On the following day the apparatus was found to be loose, and it was carefully retightened. On the third and fourth day, it was found necessary also to readjust it more or less, and the fragments of the broken clavicle continued to overlap.

On the fifth day Bartlett's apparatus was removed, and the patient laid upon his back in bed, with his arm simply tied to the side of his body by a few turns of a roller.

On the tenth day all motion had ceased between the fragments; but he was kept in bed three weeks.

Jan. 10, 1857, he was discharged from the hospital, with an overlapping of only about one quarter of an inch, and with scarcely any perceptible deformity.

Art. V.—*Practical Suggestions on the Formation of Secondary Abscesses.* By Wm. S. Bowen, M.D., of New York.

Purulent absorption and the consequent formation of secondary abscesses are, I take it, rare events, requiring for their occurrence an open vessel, and other obvious conditions not very likely often to concur. But the surgeons tell us that *secondary abscesses* are not rare—how, then, are we to account for their frequency?

I might, very satisfactorily to myself, close this paper by stating that Mulders' rejected hypothesis furnishes the only true clue to the right understanding of the metamorphoses of the food and blood, and of the formation and development of the blastema; and that as the blastema (teroxide of albumen) is formed in the blood, and as it is admitted on all hands that organization can take place within the vessels, I see no difficulty in the way of assuming that pus is sometimes also formed there directly from the blood, and that this is a more frequent cause of secondary abscess than purulent absorption.

But, as practical men never assume anything (?), I will run rapidly over Mulders' hypothetical metamorphoses of the blood, and endeavor to show, with great brevity, that this view is at least worthy of careful reconsideration by the judicious practitioner of surgery.

The plastic element of the blood is, essentially, pure albumen—albuminate of soda as it occurs in the serum. Pure albumen, which forms, as it were, the nucleus of the albuminate, is insoluble in water, and it is neutral and basic, that is to say, it combines with acids and alkalies. It occurs in the blood in combination with soda, and it also contains sulphur and phosphorus, and a variety of salts.

The albuminate of soda is insoluble in water, and in a solution of the salts of serum; but it is taken up by alkaline solutions, and by a solution of the salts of serum, to which an alkali has been added.

The apparent solubility of this body in the serum of the blood, would seem to depend upon the presence of soda. If this be true, either free soda exists in the blood, or albumen is insoluble in the serum.

The physiological relations of the albumen of the serum may be summed up in a few words: it is a transition body formed from the plastic elements of the food to be converted into fibrin by oxidation. It is at once a reserve of nutriment, and a vehicle for the transmission of inorganic matters required in the formation of the tissues and secretions.

Fibrin is formed by the oxidation of the preceding body. Oxygen combines with the sulphur of the albumen, and forms sulphuric acid, which, uniting with the soda, forms sulphate of soda, which is dissolved in the serum.

Oxygen now combines with the albumen thus deprived of a part of its soda, and this deprivation on one hand, and oxidation on the other, constitutes essentially the metamorphosis of albumen into fibrin.

Fibrin is insoluble in the serum, and in a solution of the salts of serum; but when soda is added to the solution it rapidly disappears.

There is, then, no free soda in the blood; this alkali, which is supposed to be essential to the fluidity of albumen, is not dissolved in the serum, but is held in combination with that body, which, therefore, is not, itself, in solution—it is suspended.

Fibrin occupies the physiological position between the albumen of the serum and the teroxide of albumen. It is a transition body, not osmotic, and but barely capable of suspension.

The teroxide of albumen is formed by the oxidation of fibrin. Oxygen combines with the sulphur and soda as before described, reducing still further the quantities of these bodies. Another equivalent of oxygen now combines with the protein nucleus, and it becomes soluble and osmotic. Thus oxygen replaces soda, and gives solubility to albumen.

The teroxide of albumen, incorporating inorganic matters common to the tissues and secretions, forms the blastema from which the organism is produced; it still contains soda and phosphorus. Oxygen combines with the latter, and forms phosphoric acid, which, uniting with the former, gives phosphate of soda, and this body carries off the carbonic acid generated during the formative processes.

It is scarcely necessary to say, that this is the briefest possible notice of the "Protein Theory," that will admit of *ideal* modes of oxidation, introduced in order to give an interrupted view (to correspond with the three forms of albumen) of a process obviously continuous. There can be no doubt that fibrin is, simply, albumen imperfectly oxidized, having neither soda nor oxygen enough to keep it in a fluid state, except under the conditions found in the circulating blood.

Let us now look at this subject from another point of view. Modifications of fibrin have been described under the terms, "parafibrin" and "bradyfibrin," as occurring in the blood during inflammation, and also in vesications. They are said to indicate the highest degree of inflammation. These bodies have also been termed rarefied fibrin, being of less specific gravity than ordinary fibrin, and capable of traversing the walls of the vessels in consequence of extreme tenuity.

These are but different names for blastemic albumen, which is found in the blood in increased quantity during inflammation, and also in inflammatory exudations, and this increase it has long been maintained is the cause of the inflammation. Why?

The blastema is, unquestionably, produced more rapidly in the blood during the existence of inflammation than it is in health; but this increase has been mistaken for the *exciting cause*, whereas it is but the *predisposing cause.* Even when it acts independently of injury, or any of the external causes of disease. For example, the entire volume of the blood may be largely increased over and above the quantity demanded by the normal wants of the system, and thus give rise to excessive functional activity of a secretory organ which, if prolonged, will assuredly induce inflammatory action in the organ thus affected; but it will be seen at a glance that the increased quantity of blood (plethora of the old writers) is but the predisposing cause, while the activity induced is the exciting cause.

In traumatic inflammation the case is different; instead of the whole volume of the blood being increased, the metamorphoses of albumen take place more rapidly than in health, and consequently fibrin and the teroxide are found in increased quantity.

The *rationale* is very simple; the injury has given rise to neurile reaction, which is attended by increased frequency of respiration, and oxidation is proportionately active. Here the increase is an effect, and not a cause; but as it is contended that it is a cause, and always so, and as inflammation is made up of reaction, oxidation, and exudation, I would ask how inflammation, as a whole, can be produced by one of its parts, or stages, and that stage a secondary one?

Reaction is a vague term; but in the present state of our knowledge of the nervous fluid, we are compelled to use a general term. Were we acquainted with this *imponderable* as we are with the blood—did we know its laws—or could we tell its aberrations, then much that is occult would be revealed, and maladies now often terminating in death, would be detected in their incipiency, and be prevented. This is the great desideratum in medical science, and it offers to some benevolent philosopher and physiologist, who alone can handle it, a subject worthy of all his powers of observation and reflection.

But this much we do know, as the *reaction*, either local or general, is diminished in intensity, the products of the nutritive process are degraded in character.

To conclude, let us look at our question from a third point of view. Mr. Paget is of the opinion that, "In the case of abscesses and acute inflammations, we may discern no more of purpose than in any other disease;" but as few men have developed—*design*—with more clearness and ability than he has done, we assume that he discerns a purpose in every malady, and like the learned and devout Duncan, sees "God in disease," in the wisdom manifested in the processes. But he asks the question, "Can we assign any use or purpose to the process of suppuration?" and it suits my purpose to answer it. I take it that, generally, the principal design in the formation of pus is to get rid of an excess of blastema. Now, it is very plain that if any organization can take place within the vessels, and no one doubts it, pus can also be formed there; for, what is pus but an organization, a degraded organization, the degradation being due to the excess of blastema, the *reaction* not being equal to the task of organizing the whole of it into analogous elements. It is not necessary, therefore, that pus be absorbed to produce secondary abscess, for it can be formed within the vessels; and there are cases, occurring in broken-down subjects, in whom, from loss of reactionary power, this lower organization is rapidly produced; it is, therefore, in such subjects, during local inflammatory action, of importance to facilitate "*pointing*," in order to discharge the matter, for the reason, that if an opposite course be pursued, secondary abscesses may result from breaking up the stasis of blood before exudation has taken place, and pus be formed in the blood as a consequence.

A word more on the teroxide. It is often the case in inflammatory dropsies, that protogenetic albumen is found, owing to its extreme dilution, unorganized in the effusion. It has been described under various names—"*metalbumen*" "*paralbumen*," etc.—and chemical distinctions have been drawn between them, but there is really no difference. The reagents usually employed to detect albumen are affected by the inorganic matters, either in combination with the teroxide, or in solution in the serum. It should be remembered that albumen is insoluble, neutral, and basic, combining with both acids and alkalies; hence its solubility, and its different behavior to the same reagents, according to its acid or its alkaline combinations, the affinities of the salts in solution, for the reagents also modify the result.

I might extend this article over many pages, but the reader will find all that I can say much better expressed in the books if he will but search for it, and from the same sources he can glean strong arguments to refute that which I have advanced. Should it be the means of inducing any to study the chemical physiologists as the surest lights of medical science, I shall not have written in vain.

Art. VI.—*On the Radical Treatment of Reducible Inguinal Hernia, with the Description of a New Instrument, and a Report of successful Cases.* By J. W. Riggs, M. D., of New York.

With the view of inviting the profession to the further investigation of the merits of this *new* operation. I submit, herewith, a brief account of its results, so far as they have transpired and are known, in all the cases in which, to my knowledge, the operation has been performed, together with a description of the instrument employed, the method of operating, and such remarks and suggestions as may be deemed relevant to the subject.

In order, however, to correct any misapprehension there may be as to my connection with the introduction of this operation for the radical cure of hernia, I will also state, that it was proposed and its different steps described by the writer, to a gentleman of this city, in the summer of 1855, when great confidence in its success and its comparative safety and utility over the various methods hitherto employed, was also expressed. These favorable opinions have been strengthened and confirmed by the results hereinafter stated.

For reasons not necessary to mention, the idea of subjecting the operation to the test of actual experiment was abandoned until the fall of 1856, at which time the subject was again resumed, with the determination, *if sanctioned by competent surgeons*, of performing the operation the first opportunity. Accordingly, during the fall and winter, I conferred with distinguished surgeons of this city and elsewhere, as to its probable safety and utility, all of whom, without exception, responded to my proposition in the most flattering terms of approval and acquiescence, as to the propriety of the operation. My next step was to procure an instrument to be made, for which purpose I placed in the hands of my instrument maker, Messrs. Tiemann & Co., a pencil drawing, and, after a few days, procured my instrument, very perfect in all its parts. This was also submitted to the inspection of several eminent surgeons here and in Brooklyn.

Considering the unqualified approbation of so many distinguished surgeons an ample guarantee for the undertaking, I proceeded next, in search of a suitable subject for the operation, to visit the different hospitals in New York and Brooklyn, and the State Emigrant Hospital on Ward's Island, at which latter institution, and after repeated visits to each, the first case presented itself on the 2d day of May last.

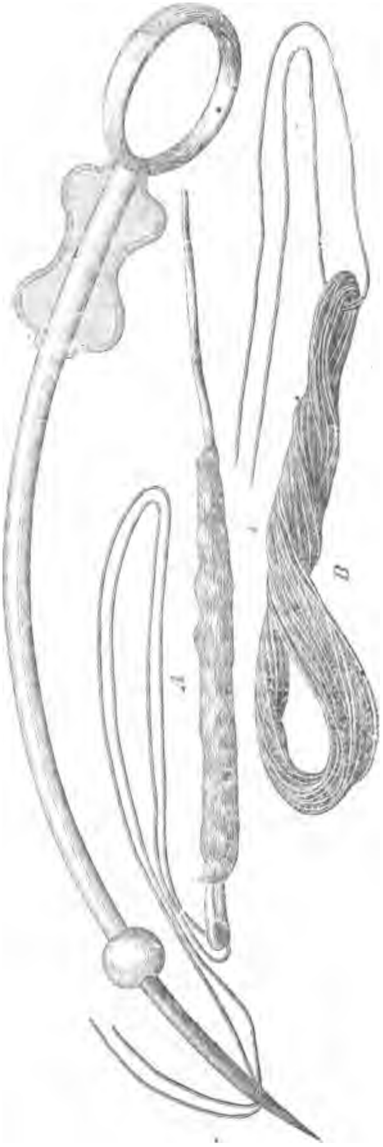
On the day and at the place last mentioned, then, this operation for the cure of hernia was first (it is believed) performed by Prof. Carnochan, with my instrument, and assistance, in some of its unimportant steps, and in the presence of several practitioners and students of medicine.

On the 20th day of the same month, the same operation was performed by myself, near Plainfield, N. J., in the presence of Drs. M. M. and E. Friselle. During the last summer and fall, and at various intervals up to the present time (Feb. 15), Dr. Carnochan has performed this operation on six different patients, one of whom had double hernia, thus making, in the aggregate, eight operations since the 2d day of May last, the date of the first operation. (The history of these will be given after a description of the instrument, method of operating, etc., which now follows.)

The instrument devised for and employed in this operation, and which seems well adapted to the purpose, in all respects, bears some resemblance, in its general appearance, to the ordinary trocar, excepting in its curvilinear figure, and the bulbous extremity of the canula, and, for present purposes, it may be called the "Hernial Trocar." A very correct idea of its form and construction is afforded by the wood-cut illustration on page 216, which represents the instrument used in the foregoing operations, very perfectly and of nearly full dimensions, and will, therefore, supersede the necessity of any farther description.

Operation.—Before proceeding in the operation itself, the surgeon will, of course, provide himself with whatever substance is to be drawn into the canal, whether this consist of a small skein of silk, or compressed sponge, the latter, in our estimation, being entitled to the preference.

The patient, placed upon his back, with the *hips somewhat* *elevated* (a good precaution, particularly when the openings are large, and the viscera liable to escape, while in the horizontal position), the surgeon, standing or sitting at the right side of the patient, after reducing the hernia, places the index finger of the left hand upon the integuments of the scrotum, anteriorly and at a point *not higher* than the juncture of the lower with the middle third of the pouch. Sufficient pressure being now made with the finger to catch and hold, upon its end, the tegumentary tissues of the scrotum; these are now to be carried, upon the end of the finger, upward over the testis and arch of the pubes, until, immediately above the bone, the abdominal ring is easily found, and into which the end of the finger readily becomes fixed; where, as a guide to the instrument, it is to remain stationary, until the bulbous extremity of the canula is made to take its place *fairly* and *securely within the external ring.* The instrument, in the right hand of the operator, and held at the serrated portion of its handle, between the thumb and fingers, something after the manner of holding a pen, is passed into the pouch of the invaginated scrotum, and made to glide along and upon the back of the finger to its destination within the ring. The finger may then be withdrawn, and the left hand being now



liberated, the thumb of this hand may be placed at a point opposite the internal ring; where, by pressure, all danger from any tendency there may be to partial protrusion of the intestine through the internal ring can be effectually obviated, while, at the same time, the pressure thus exerted at this point, tends materially to facilitate the passage of the instrument through the tissues. The instrument is now carried forward until the bulb approaches as nearly as practicable to the internal ring, when the handle is depressed upon the pubes, which serves to elevate its bulbous extremity, causing a prominence upon the surface, and indicating both to the touch and to the eye the exact point of its exit through the integuments. The operator now places the index finger of the right hand through the ring of the stylet, and with a single movement of the finger thus placed, pierces all the tissues involved in the operation, and brings the point and eye of the instrument into view upon the surface opposite the internal abdominal ring.

The surgeon, or his assistant, now arms the stylet, by passing through its eye, for an inch or more (as seen in the plate), the free ends of a slender cord, or tractor, previously passed through the silk or sponge; when, by a single reversed or backward movement of the finger, which is still in the ring of the stylet, the instrument is entirely disengaged and freed from the tissues, being still, however, concealed from view within the pouch of the invaginated integuments. The entire removal now of the instrument, leaves the free ends of the tractor passing through the puncture in the scrotum, and hanging loose below. These are now seized, and by the necessary traction, the foreign body is drawn from above into the passage, to the distance of some two inches or more, and leaving its upper extremity protruding from the puncture above; when, dropping from his grasp one of the ends of the cord, the surgeon, by means of the other end, draws it entirely out, and thus completes this bloodless and comparatively painless procedure.

Dressing, treatment, etc.—In ordinary cases, where the apertures are not very much distended, and in most cases, especially when the sponge has been employed, there are, at first, few indications for interference; none, indeed, beyond the necessary precautions to prevent the escape of the viscera, and, as before stated, when the compressed sponge is introduced, the secretions absorbed by this substance soon expand it so as, with the swelling and increased rigidity of the tissues which necessarily ensue, to effectually prevent the occurrence of the event alluded to. Independently, however, of the foregoing consideration, a given amount of equable and uniform pressure is requisite, in order to effect the occlusion of the passage, by means of the adhesive inflammation, to produce which the operation is designed. For this purpose, I am aware of nothing better than the introduction, under a bandage, firmly drawn around the pelvis, of a large sponge, previously dipped in water. This retains moisture longer than the cloth compress, does not so effectually exclude the air, and thus hinder or prevent the cooling process of evaporation from the inflamed part, while the pressure exerted by it is more equable and agreeable to the patient, and it thus fulfills at once, and in a very satisfactory manner, several important indications in the treatment.

I am aware that the foregoing suggestions, relative to the treatment *subsequent* to the operation, may be regarded by the professional reader as supererogatory or arrogant, and I have been induced to offer them only from a consciousness of having witnessed very many instances of failure to cure hernia, simply from too great and too long continued pressure during the inflammation; the inevitable effect being to prevent that free and plentiful deposit of plastic lymph, on which the permanent closure of the hernial apertures and consequent cure of the malady is almost entirely, if not wholly dependent. These disastrous results have been repeatedly seen by the writer, both in cases where the cure was attempted by injection of the sac, and also when the requisite inflammation had been induced by the *truss*, and resulting in *apparent* cure; but when, by the continued and persistent application of undue pressure, absorption of the new deposits (which might be expected), and consequent destruction of the delicate and tender adhesions, and re-opening of the hernial passage, have resulted from the unintelligent use of the very means intended for the cure of the disease. (The case of C. Randolph, found below, will serve as an illustration of this important principle.)

The following report of cases, at Ward's Island, was placed in my hands by Prof. Carnochan.

Case 1.—Aloys Lechnor, German, aged 47 years, was admitted to hospital April 1st, 1857. Had inguinal hernia of right side; tumor of the size of a hen's egg; of one year's standing, and had recently passed the external ring into the scrotum. On the 2d day of May last, Prof. Carnochan performed the operation above described, by drawing into the canal a small skein of silk previously immersed in tr. iodine. After some forty-four hours, this was removed, and a light French truss applied over the inguinal canal, for the double purpose of opposing the descent of the viscera and of promoting adhesion. For about one week there was a very slight oozing of pus (a few drops each day), from the puncture above, the wound below having entirely closed within a few hours after the operation. The patient experienced no pain, nor was there any appreciable constitutional disturbance at any time manifested in the case. Patient continued in the recumbent position mainly, for about four weeks; when, there being no appearance of hernia, he was permitted to leave his bed, and, after a few days, to lay aside his truss, having, as he said, no further use for the instrument.

In the latter part of July, symptoms indicating the necessity of medical treatment were developed, and this patient was accordingly transferred to the medical department, where, on the 9th day of September, he died of tuberculosis of the lungs.

Post-mortem—10th Sept.—Upon opening the cavity of the peritoneum, the orifice to the hernial sac could not be traced, the internal ring being firmly closed around the cord. On the outer side of the peritoneum, and just below the situation of the internal ring, was found a small rounded body of a yellowish color, supposed to have been the remains of the hernial sac. The *upper portion* of the inguinal canal, for nearly an inch, was closed by plastic exudation, which had become organized and somewhat fibrinous in its appearance; while the canal at its lower part and the external ring, were, to appearance, in their normal condition, though the cord, throughout the entire length of the canal, seemed to be imbedded in plastic formation.

The skein of silk used in this case being too large for the puncture made by the instrument, it was not introduced more than about one inch, which will explain the facts mentioned of the lower portion of the canal and external ring being in their normal condition; while, at its upper portion, both the canal and internal ring were firmly closed.

Case 2.—Henry Schoby, German, aged 16 years, admitted July 17th, 1857. Inguinal hernia of right side, of two years' standing; tumor medium size, and passed into the scrotum; external ring flabby and relaxed, and easily admitted of introduction of the finger; operation, same as in case No. 1, performed August 1st. The silk was removed forty-eight hours after operation. August 7th, the wound was closed; effusion of lymph not large. This patient was confined mostly for four weeks, when, after the application of a weak truss, he was allowed to leave his bed. After some ten days, the truss was dispensed with, and the patient left the hospital much improved, with a small hernial projection, however, opposite the internal ring. In this, as in the former case, there were no constitutional symptoms worthy of note.

Case 3.—Justinus Herbel, German, aged 26, admitted September 30th, 1857. Inguinal hernia of left side descending into scrotum; tumor size of a turkey's egg; external ring large and relaxed; operation as before, by Dr. Carnochan, November 11th. Silk removed on second day; copious effusion of lymph throughout the canal; patient confined about four weeks; gentle pressure by means of compress, secured by bandage around the hips. This patient was now permitted to leave his bed, and also had weak truss applied, which was continued for about six weeks, at which time it was dispensed with, and, after some three weeks, left the hospital, with no appearance of hernia having previously existed.

Case 4.—Christian Luder, Switzerland, aged 40, admitted October 15th. Double inguinal hernia, of three years' standing; external ring of left side very large, measuring, in its greatest diameter, one and a half inches; tumor of this side the size of a large hen's egg; opposite side, ring also very much enlarged, and the tumor as large as a man's fist; operation 28th of November; the silk, imbued with tr. iodine, removed second day; exudation of lymph apparently not large; operation on opposite side, on 23d January, 1858, using, in this case, an elongated piece of compressed sponge, previously saturated with tr. cantharides. This was also withdrawn on the second day, and followed (as also on opposite side), with a considerable discharge of pus at the upper puncture, which continued some ten days. Slight and equable pressure was maintained upon the canal, and the patient who is still (Feb. 15) under treatment, is confined to the horizontal posture, though permitted occasionally to walk about the ward without the truss; the hernial tumor has not made its appearance on either side, and the passages seem to be blocked up.

Case 5.—John Carsten, Swiss, aged 48, admitted August 23d. Large scrotal hernia of right side, of 15 years' standing; tumor size of two fists; operation by compressed sponge, January 23d, 1858; tent removed second day; suppuration scanty; effusion of lymph considerable; moderate pressure, by means of compress and bandage, maintained during the last three weeks. This patient was under treatment for laryngismus, of which he has had frequent attacks since the operation, causing violent action of the abdominal muscles, from which cause (it is believed), the hernial tumor has reappeared in the canal, though, in no instance has it descended into the scrotum; whereas, previous to the operation, no form of bandage or truss, which had ever been tried, would prevent the descent of the contents of the tumor. This patient, still under treatment, is confined to his bed, and in the horizontal position.

Case 6.—George Schaffer, German, aged 53, admitted December 17th. Scrotal hernia of right side, over twenty years' standing; tumor size of full grown fœtal head; impossible to retain the parts by any contrivance ever employed for the purpose; the rings both very large, and the internal so dragged down as to render the passage to the abdominal cavity very nearly direct; operation January 20th; silk saturated with iodine; was withdrawn on second day; slight discharge, continued two days; experienced some pain for three or four days after operation. At this time (Feb. 14), two weeks after the operation, the patient is still under treatment, keeping mainly the lying posture, with moderate pressure by compress. While standing and walking, the viscera have not as yet reappeared.

Case 7.—(This case, which fell into my own hands, and continued under my care and observation throughout, occurred on the 20th of May last, and is, therefore, the second operation in point of time, and is inserted here to give the hospital reports in consecutive order, as they were placed in my hands.) C. Randolph, N. J., aged 63, laborer. Scrotal hernia of right side, twenty-six years' standing; tumor large, and uncontrollable by truss; operation 20th of May, 1857. The silk, previously immersed in tr. iodine, was removed in forty-three hours; one or two drops of pus escaped at the time, after which none was discovered; cloth compress, confined by bandage and making moderate pressure, applied; the parts somewhat swollen, and tender to the touch, but not painful; ordered anodyne at night (morph. sulph.), if required; compress to be kept wet.

May 23.—Had slept well without anodyne; surface somewhat heated, but moist; pulse 85; tongue clean and moist; appetite good; no pain or thirst; swelling and soreness considerably increased, but confined wholly to inguinal region; cord quite rigid and tender to the touch. Ordered bowels opened by laxative (mag. sulph.), anodyne if necessary; for cloth compress, was substituted a large sponge, ordered to be kept moist with water. 24th.—Bowels opened; had slept well without anodyne; pulse 90; tongue clean; swelling and tenderness increased, still circumscribed in extent; no pain; appetite unimpaired. At this time a portion of omentum (as it appeared), had found its way through the internal ring, which from the rigidity and soreness of the parts, I was unable to return. Ordered only occasional wetting of the sponge and careful observance of the horizontal posture.

25th.—Found no essential change except some increase of the swelling and tenderness, with corresponding increased frequency of the pulse. The patient at no time complained of pain, nor was there sufficient constitutional disturbance to excite the slightest apprehensions. From the last mentioned date there was nothing in the case worthy of note, except the gradual subsidence of the swelling and soreness, which had entirely disappeared by the 5th June (fifteen days after the operation), at which time, after the application of a truss, the patient was allowed to leave his bed. It may here be stated, that I applied this instrument with great reluctance, remarking to the physicians present at the time that I did so only because I had nothing better, and preferred to risk the anticipated injury from its use, to that of a return of the hernia for want of the necessary support to the delicate adhesions so recently formed. Though there were now not the slightest indications of hernia in this case, my fears, as then expressed, were, and I then predicted, that the constant pressure of the convex truss pad upon these new and tender formations would probably result in their absorption and the consequent reopening of the hernial apertures within six months. I continued to see this man at various intervals up to last October, when, for the first time, I discovered increased fullness over the inguinal canal, which, upon careful examination, I had no doubt was caused by intestine in the canal. Again, very recently, I visited Mr. R., when on removing the truss, a tumor nearly as large as a hen's egg soon formed and descended to and occupied the *precise situation* where the pad of his instrument had rested. The ring upon this side, as compared with that of the opposite side, is smaller, more rigid and firm to the touch, and there is every reason to hope it will effectually oppose the farther escape of the viscera, so long as it remains exempt from the injurious and destructive consequences which invariably and inevitably result from undue and long-continued pressure.

Remarks.—Of the operations and devices employed for the radical cure of hernia, it is not our purpose to speak, except merely to enumerate most of them, and in the language of others, to record in general terms the verdict of the profession as to their merits.

These consist mainly of the following: castration; cauterization; ligature; incision; excision; scarification; dilatation; acupuncturation; invagination; injection; organic plugging, either by the testis or the sac, or dissected integuments or invaginated skin; drawing into the canal a bag of gold-beaters' skin or shreds of gelatine; perforations of the sac with pins, or of the canal with needles, suture, etc. In the report of a committee of the *Amer. Med. Assoc.*, consisting of Drs. Hayward, Warren and Parkman, of Boston, the following statement occurs: "All the operations that have been practised for this purpose, till within the last fifty years, have been of a severe character; some of them dangerous, and in many instances death has been the consequence. Ligature, sutures, excision of a part or whole of the sac, and castration, were the principal operative methods in use for eighteen hundred years." Again, in the same report, is found the following language: "the mere fact that so many have been suggested and tried, and that none of them have been received with a great degree of favor, or if so, that they have not retained it for any considerable length of time, is strong presumptive evidence that there is either an inherent difficulty in the nature of the infirmity that is intended to be removed by them; or, that the means of accomplishing it have not yet been discovered."

The committee above referred to will at once be recognized by the profession as eminently qualified, in all respects, for the task assigned them by the *Amer. Med. Assoc.*, and the conclusions to which they arrive in the final summing up, are in strict accordance with, and fully supported by, the best authorities on this subject.

What, then, are the "inherent difficulties" in the way of the more successful treatment of reducible inguinal hernia? We answer. From the opportunities afforded us for witnessing the results of several different methods of treatment, and the supposed cause of failure in these, we are strongly inclined to the opinion, that the comparatively low *vascularity*, and correspondingly low *vitality* of the tissues immediately concerned in hernia, constitutes *one* of the "inherent difficulties" spoken of; and that in consequence of this low vitality, the *milder* and *safer* of the means hitherto employed have been *inadequate* to the production of the necessary inflammation in these tissues to cause occlusion of the hernial apertures by adhesion.

Again, it may be observed, in a large majority, if not in all, the surgical operations which have been practised for the radical cure of hernia, the truss, or its equivalent, acts a conspicuous part in the after treatment; and though it is a well-settled principle, and universally known and admitted by the medical profession, that continued pressure upon the animal tissues causes absorption of the tissues thus acted upon; yet it is a singular fact, that in their attempted explanation of the frequent failure to cure hernia by the different methods used, *pressure* is seldom or never mentioned by writers as a cause, whereas, there is just grounds for the belief, that *undue pressure* upon the recent formations has contributed its full quota of failures by the various operations practised.

That there may be other obstacles or "inherent difficulties" to be encountered in the radical treatment of this infirmity, is not improbable, and the question here suggests itself, whether the constant undulations of the abdominal parietes, and the ever varying and almost incessant movements of the muscles and other tissues involved in hernia, are not deserving the attention of the surgeon.

Assuming, then, that the great want of success hitherto has been owing in part, if not mainly, to the foregoing causes, the question next to be considered, and which is of paramount interest, is, can these difficulties be obviated or overcome? With all due deference to those who differ from us, we are constrained to give an affirmative answer to this important inquiry; at least, we hazard the opinion, that the impediments to success above noticed can be so far overcome, as that the radical cure of reducible inguinal hernia shall be considered the *rule*, and no longer the *exception*.

With regard to the first-mentioned difficulty (the low vitality of the tissues concerned), we remark, it has already been sufficiently demonstrated, and is a self-evident proposition, therefore, that the introduction into the inguinal canal, throughout its length, of a sponge or other foreign body, previously imbued with iodine, and of such dimensions as literally to fill up this passage, and thus bring in contact with the tissues the irritant employed, will effectually serve to produce the inflammation requisite for all practical purposes.

The subject of *pressure* is next to be considered; and the question here arises, can the *necessary* pressure be applied without evil results? To this inquiry we also respond affirmatively, and proceed to state, that a truss, so constructed as that the force or power of the spring shall be exerted at separate and distinct points or intervals *contiguous* to the canal, on either side (and not *upon* it), and maintaining also the same position relatively to both the internal and external rings, will, as may be seen, accomplish this object in a very perfect and satisfactory manner; and while it thus affords the support necessary to prevent the escape of the viscera, it also serves effectually to approximate and hold "in situ" the tissues traversed by the hernial openings; thus contributing very materially to their union, and the consequent occlusion of the passage. Again, as the "multipedal truss" exerts little or no pressure either upon the canal or spermatic cord, and may, therefore, be worn for an indefinite period without injury, its use may be continued after the operation until the recent fibrinous deposits have become perfectly organized, and sufficiently firm to resist the descent of the viscera.

As to the third and last proposition, viz., the mobility of the tissues concerned in hernia, we have only to say, that if the noduled face of a truss-pad properly applied to the parts does not confine the tissues sufficiently for all practical purposes, we are aware of no means by which to accomplish this object. It is believed, then, that if the necessary inflammation take place in the parts, and nature be properly *aided* (rather than *thwarted*) in carrying out her own unerring laws, the *cure* of hernia by the means proposed, would, as before stated, become the *rule* rather than the *exception* as it now is.

My attention has, within a very few days, been invited by Professor Armsby, of Albany, to a new instrument devised by him, and with which he had, either in November or December last, operated with favorable results for the radical cure of hernia. The operation of Professor Armsby, as described by himself, consists in drawing through the hernial sac a single thread, which is left protruding both above and below, to be drawn back and forth daily, and to remain in the wound some two weeks or thereabout, during which time the suppurative discharge which is occasioned by it escapes, or is forced out at the puncture through the tegumentary tissue of the scrotum. The manner of performing this operation, as detailed also by the doctor, is similar to that described in the foregoing pages, for the introduction of the compressed sponge and other substances employed.

An operation by *seton* is also described by Velpeau,* as having been performed by Dr. Moesner with success, in four cases. For the details of this operation, somewhat lengthy (and to me incomprehensible), the reader is referred to the above work.

The object of this paper being, as before stated, to invite farther investigation of the merits of the operation described; the discussion of the many methods heretofore tried for the cure of the malady, will not, we repeat, now be attempted.

As to the merits of the operation practised in the cases here reported—and by which it is designed to bring about union by the first intention—those who may become sufficiently interested to test it by actual experiment, will, of course, decide for themselves.

That there are, however, points of interest connected with its history thus far, and that this operative procedure possesses several important advantages over any of those hitherto practised, is believed to be undeniable. And I must be permitted here to add, if reducible inguinal hernia be curable *at all* (and we believe it to be so in a majority of instances when the obliquity of the canals is not lost), it may be accomplished by the method above described.

* Velpeau's *Operative Surgery.*

The reader will have noticed that, in the eight operations above given, were comprised persons of various ages, ranging from sixteen to sixty-three years. There are also found among these, ruptures of all dimensions, and, in point of duration, varying from one to twenty-six years. Some of these were under treatment for other diseases, and *none* of them can be regarded as the most favorable subjects for any kind of surgical operation.

Notwithstanding the fact, that among these, was not *one* which would have been *chosen* for an untried operation, yet it is seen by the report, and is well worthy of mention, that in no instance was there sufficient constitutional disturbance scarcely to attract attention. The operation itself is very simple, and equally safe; is attended with no inconvenience to the operator, and to the patient, with comparatively no pain.

Before leaving this subject, and with the view of impressing upon the reader its importance, *practically* considered, we would recall to his mind, that if the estimates of the proportion of ruptured persons, as given by different writers, are at all reliable, there are in this city and immediate vicinity, *over forty thousand* cases of hernia. And, moreover, if the history of its treatment in the past be considered a fair criterion for the future, the inference is fully warranted, that a large majority of this vast number are doomed to perpetual peril and life-long martyrdom, unless rescued by the timely interference and *more efficient* aid of the humane and philanthropic of our noble profession.

87 Prince street.

ART. VII.—*Address Delivered at the Commencement of the Winter Course of Clinical Instruction in the Bellevue Hospital, on the* 19*th of October*, 1857: WASHINGTON SMITH, ESQ., Governor of the Alms-House, Presiding. By JOHN W. FRANCIS, M.D., LL.D., President of the Medical Board, and Senior Consulting Physician of the Bellevue Hospital. Reported by Dr. GEO. F. SHRADY.

Governors of the Bellevue Hospital, Physicians and Surgeons of the Medical and Surgical Department, Professors and Students devoted to the Science of Healing:

I shall address to you a few words on the occasion of this important meeting, the first regular opening of the session for Clinical instruction in this new Institution.

I come before you with no set form of speech. Long acquaintance with the projectors of this new and important plan for enlarging the sphere of clinical instruction at this hospital, and sincere esteem for their professional worth and characters, have led me once again to assume the office of a medical instructor, so far as the casual remarks I may offer to-day would justify such phraseology. Friendship has brought me before you, and I am prompted by a desire to do all in my power to favor a measure which I think must be attended with the most beneficial results to science and humanity. I shall deal with a few important facts, the results in part of a long life devoted to medicine, interspersed with a few observations, and rendered, perhaps, more acceptable by here and there a reflection deduced from the subject matter which flows in upon memory.

Students of medical and surgical science: when I cast a glance at this assembled multitude before me, when I study the ingenuous countenances you bear, look at that intelligent front, and its earnestness of expression, and witness that thoughtful demeanor which marks your every act, I cannot but believe you have come hither with a fixed determination to enter upon the study of the art of healing with the liveliest sense of its importance, and a just estimate of the means now afforded you to obtain a mastery in your great calling. Many of you are strangers to me at this first interview: I see that some of you have arrived from remote places: in short, you have come from the east and from the west, from the north and from the south, speaking in popular terms; but, thank God, New York never in her life has ventured to make such geographical distinctions. Her vocabulary admits no such sectional divisions. She holds out the banner, Union; she sticks firm to the original thirteen, she venerates that original phalanx of patriotism; and every member added to the confederacy since the birth of the Constitution only swells the emotions of gratitude which fill her heart: she hails all these as one family; whether your domicile be on the borders of the Atlantic or on the shores of the Pacific Ocean.

I have said, I have no set form of speech for this occasion. Little opportunity for preparation has been afforded; the best had been done for the few hours granted: but what flows from the heart will be received with confidence as the honest expression of one who has had some opportunities for observation, and has not been wholly an absentee from the reflections of the closet. Shall I then ask you what purpose has brought you hither? I myself will answer. You have visited this metropolis, because of its high renown, its great capabilities, its vast advantages for the prosecution of the sciences, whether mechanical or philosophical, and for its numerous facilities for medical and surgical instruction. In being actuated by such motives you have acted wisely: and I fondly trust that not one of you will return to his home without being satisfied with the results of the choice he had made.

There are a thousand circumstances which present themselves to consideration when we contemplate this great metropolis, as especially fitted for intellectual improvement, and for professional acquisition. Its multitudinous and diversified inhabitants, its cosmopolitan character, the innumerable avocations of its people, its variety of mental and physical occupation, its numerous institutions for the cultivation of letters, for the beneficent purposes of humanity, for the blind, for the deaf and dumb, for the idiot and the imbecile, for disturbed and abnormal conditions of the intellect, for every variety and form of physical disorganization and disease that afflict mortals: these circumstances have influenced you. Moreover, provision most ample is made for all these states and conditions, and, with scarcely an exception, every institution thus appropriated is, I believe, accessible to the survey of every well-conducted student. I know no other place throughout the broadcast land where so many and so great advantages are within the reach of the ingenuous disciple and the man devoted to knowledge.

The history of New York furnishes you a striking example of what industry, enterprise, and capacity can accomplish. Her mercantile character is displayed in the story of her marine or naval architecture, from the time shortly after the first European placed his foot upon her land, when Adrian Block completed his vessel, the *Reckless*, of about sixteen tons burden, to navigate the waters of the New World, down to the present day, when forests of mighty masts and leviathan steamers from every port fill her harbor. A like feature of her indomitable energy, resembling that of her mercantile, is to be found in her great number and important charities, whose large and appropriate buildings stud the city everywhere. It is to these that the time not devoted to the instruction of your teachers, will be properly appropriated. These great charities or hospitals are to furnish you with the material of clinical knowledge, aided by the able elucidations of your professors.

It is most remarkable how early medical men of distinction were occupants of New York. During the career of the renowned Dutch governor, Petrus Stuyvesant, we find Samuel Magapolensis, a graduate of Leyden, eminent in practice, and distinguished as a writer. Some short time after, when the government fell into the hands of the English, the memorable death of the reckless Governor Sloughter, who was by some supposed to have died by poison, but by the more intelligent, known to have perished from a debauch, led to an event of scientific consideration in the progress of medical knowledge. Diversity of sentiment induced a post-mortem examination of the body of the defunct governor. Johannes Kerfbyl, also a graduate of Leyden, and five other doctors, conducted the inquiry, among whom we find Hans Kiersted, a descendant of whom now lives among us. I can readily imagine the peculiar gratification the Dutch doctors enjoyed in the discharge of this assigned duty; a profligate English governor, who, in a state of inebriation, had signed the death-warrant of the patriotic Leisler, was now to prove useful for medical and chirurgical investigation to professional men, who detested his misrule and folly. This dissection of Sloughter occurred in this city in 1691, and is the first on record in the American colonies. The population of New York was then about four thousand. The autopsic examination of Hermanus Carroll, by Drs. John Bard and Peter Middleton, is generally set forth as the first, but this occurred sixty years after. These eminent men may be recognized as distinguished in the art of healing:

they succeeded the philosopher, politician, and physician, Lieutenant-Governor Colden, some thirty years. The medical and philosophical career of Colden was followed also by Dr. John Van Buren, and by Johnston, a correspondent of Linnæus, and this special list of medical worthies might be enlarged by the names of Dubois, Ogden, and Muirson. John Jones, the surgeon, now followed; and Samuel Bard, the associate of Clossy and Tennant; I might here add the British army medical and chirurgical staff, with Bayley, Farquehar, Nooth, and Michaëlis, the son of the great commentator on the Scriptures, the best qualified, I believe, of that selection of men who did army duty for the British troops while occupants of New York. Bard knew him well, and I have enlivened my moments of despondency by anecdotes of Michaëlis and Nooth. But I shall close the catalogue, inasmuch as the body of skillful physicians and surgeons of a recent date is too formidable to introduce to your notice at this time.

This city is also to be mentioned as the first in point of time in relation to the early organization of public charities for humane and benevolent purposes. In 1699, when its inhabitants scarcely exceeded six thousand, relief was afforded the poor by medical men in lodgings specially provided: a dispensary was founded by John Bard. In Dr. McCready's late historical address, other and still more striking evidences are given of the devotion which this city, almost in its infancy, gave to medical and charitable institutions. About those times we had a Doctor Magrath, a Scotchman, of singular roughness, of whom I have often heard the venerable Judge Benson speak. Magrath has the merit of introducing the practice of cold lavations for fevers, long before the appearance of the Reports of Currie, of Liverpool.

The great Alms House, erected in 1791–4, deserves commemoration. It followed the establishment of the New York Hospital by some twenty years: this last-named Hospital is still in the career of its mighty usefulness, without abatement of zeal on the part of its able governors, and has secured a wide spread renown from the great and important operations in chirurgical science which have been performed within its walls, by the masters of surgery, who from time to time have been in attendance: that it has also been the means of unfolding many interesting views in the practice of physic is equally well understood from the clinical elucidations which have been published by its physicians and surgeons, and which have reflected on the medical science of this city peculiar renown. Richard Bayley, Richard S. Kissam, Wright Post, Valentine Mott, Alexander H. Stevens, are the strongest names I may mention in the surgical department: David Hosack, Valentine Seaman, James S. Stringham, Samuel L. Mitchill, Edward Miller, and Joseph M. Smith, may be recorded in the effective roll of its clinical practitioners.

We have at this present time some seven Dispensaries in this city, most useful charities for the relief of physical suffering, and for every variety of disease, and attended by competent prescribers of disciplined medical culture: the late Dr. Hugh McLean, who was early attached to the first city Dispensary, held that responsible trust for some ten years and upwards, with signal benefit to the afflicted. We have institutions for the treatment of diseases of the eye and ear, founded some thirty years ago by Drs. Delafield and Rodgers; and more recently another of like purpose, at the head of which is Dr. Stevenson: but here I must stop with these minute details. When we record the New York Hospital, and Bellevue Hospital, and Alms House department, we have said sufficient to lead the examiner into their history and their progress to the conviction that no city in the Union possesses more ample accommodations designed to carry out the great behests of the benevolent, and by clinical opportunities to instruct the students in practical medicine and surgery. For the history of the early Alms House, when situated adjacent to our present City Hall, and its subsequent removal to its present site, I must refer you to Dr. McCready's interesting narrative, as my limited time causes me to pass over the names of the distinguished physicians who have exercised their art so beneficially within its walls. Nor can I but advert to the fact that this institution received a new impulse under the administration of Dr. Reese, as physician in chief. In fine, gentlemen, it is speaking in no exaggerated tone, to assert that in no other city of the Union can such ample sources of information of a practical nature in our profession be found as are within your reach in this place; and shall I add that the very knowledge which the institutions afford so abundantly, is the very science you require, if ever you aim at the high distinction of being sound physicians and surgeons.

I am the last man in the world who would lessen the value of book knowledge; I know that reading is indispensable to the student who cherishes the title of an enlightened doctor: more or less of bookish wisdom you are to accumulate if you are solicitous to make the prelections of your professors profitable; if you seek that fullness on any subject, that gratifies the inquirer after truth, and gives confidence to the reasoning faculties of man. But here a caution must be interposed; the folly of appropriating that time to reading which might be infinitely more advantageously given to observation when the teacher brings before you the apparatus of instruction, and elucidates with specimens the subject matter of his lecture. At the time of instruction your great duty is to be all eye, all ear; some few notes may indeed be taken, to aid the memory for further investigation; but no student, wisely pursuing the curriculum of the college or the clinique of the hospital, will reap an equivalent by books and pen, while neglecting well directed observation on the lecturer of the anatomical theatre, or the phases of diseased agency in the clinical sufferer. No reading ever made an anatomist; no reading ever created a physician. In our profession the aptest scholar can acquire but little substantial information touching the mechanism of the human frame, without dissection or tracing with attention the knife of the anatomical expositor; and, lucid as many of our practical writers are in pathological description, nothing but the exercise of the senses can impart full reliable knowledge of pathological phenomena. The pulse is to be felt, the respiration to be noted, the temperature to be observed; the eye is to be studied, the animal functions to be watched, the complex workings of the brain to be regarded, if we desire to comprehend the nature of fever and of other infirmities. I had read between two and three hundred tracts and volumes on yellow fever before I witnessed that pestilence as it prevailed in New York in 1822, and which is so admirably described by my pupil and friend, Dr. Townsend ; I had also had the fever myself, and lay at death's door with it years before; yet when this disorder was rife among us, I found I still had a good deal to learn. And how was it when the Asiatic cholera appeared among us in 1832: many of our medical men had read largely of the direful epidemic as it appeared abroad, but there was not a man among them that was not confounded when he personally encountered the disorder at the bed-side. And then we had an order of doctors among us who had written against the bug-bear contagion, and pronounced it the phantom of a diseased imagination; yet when the cholera came, they fled like sheep pursued by hounds. Among this corps of would-be fearnaughts was Ives, a sort of second Imlac. Put it down, therefore, as a medical axiom, as firmly fixed as a mathematical principle, that observation is equally essential for the acquisition of medical science and for the practical exercise of the art itself ; that you might as well presume to become the successful navigator by sojourning in a sylvan retreat, as become the physician or surgeon without clinical instruction.

I have limited these observations to two or three departments of our profession, but their application is equally well founded when we look at the other branches to which your attention is called ; where is chemistry to be illustrated but in the laboratory of the chemical professor; where is a knowledge of the tools which the physician demands in the practice of his high calling to be acquired, I mean the *materia medica*, but by an individual or personal acquaintance with the sensible qualities, and inherent powers of each article, as unfolded by pharmaceutical science. Was any man ever made a botanist without roving over the forests and the fields? Read the life of Michaux and of Pursh, if you desire to comprehend how the natural history of our vast country has been brought to light ; consult the records Audubon has given us of his wanderings, if you have a longing to know how he became the greatest ornithologist the habitable globe has produced. I hope I am not too earnest in this matter, the value of observation, or what you might call personal experience. I tell you it is after all the only knowledge that can inspire you with undaunted confidence in the sick room, and fortify your conscience when you retire to your couch at night.

I shall never forget the tone of voice, the elocution which I heard proceed from the mouth of John Abernethy, when he told the boys (for he called all his class by that designation, though some were sixty years old), that they must judge for themselves for the truth of what he uttered by what they derived from hospital practice. "I was the first," said he, "that described fungus hæmatodes; I have seen as yet but three cases, but the disease is distinctive, well marked, and cannot be mistaken by the clinical eye: yet (added he), I meet practitioners now and then who tell me they have had twenty cases. No dependence can be placed upon such observers. If they would but visit St. Thomas, I could convince them of their error, and expose their ignorance. These pests of the profession have no clinical experience, and magnify their stupidity by falsehood. Boys, the hospital is the college to build up the practitioner."

There is one other branch of our profession which, in these casual observations, I had like to have omitted, but which has demands upon your attention as strong, if not equally imperative as any I have noticed; I mean midwifery, or, as we more generally call it, through modern delicacy, obstetrics. Obstetrical science may fairly be considered in part chirurgical, in part medical. No practitioner, either of surgery or of physic, can be considered properly disciplined for the art of healing without a close and continued devotion to it. It calls for requisites, both mental and physical, of a superior order; it summons knowledge accurate and immediate; it often involves responsibilities the most weighty that can tax the capacity and feelings of man; it is that special branch of the profession upon which your reputation through life most depends; it is the one upon which, perhaps, the greatest happiness of families is secured, and in the practice of which your actions, your speech, nay, almost your very thoughts are studied. Incompetency in the duties which it enjoins is watched with greater vigilance than in any other branch of your calling: but it strikes, after all, a favorable balance in your behalf, provided you have manifested adequate skill in great emergencies. The services of the accoucheur are rarely forgotten in families; and confidence in the dexterous operator perpetuates lasting blessings on your head. You secure that reputation by midwifery which is rarely obtained by any other of your medical transactions. Many of you may be aware of the standing which the late Dr. Lloyd, of Boston, enjoyed as an accoucheur; and many of you are familiar with the great consideration to which the late Dr. Dewees, of Philadelphia, obtained. In this city, Dr. Samuel Bard has stood preeminent in the art. Bard was a graduate of Edinburgh, a ripe scholar, a conscientious man, and one devoted to his high trust. While a student, Smellie's system had nearly all the run, and that you know was the pernicious practice of the incessant use of instruments. Bard attended Mackenzie, of London, who, in part, protested against so frequent a recourse to instrumental labor. Both Smellie and Mackenzie had been more or less governed by Burton, of York. This Burton is the Dr. Slop, so famous in Sterne's Tristram Shandy. You must remember when Dr. Slop carries his green bag of instruments with him in his circuit of business, that Sterne tells you it was encumbered with an innumerable string of knots, rendering it difficult to get hold of the instruments. This was satirical, in order to prevent the doctor so heedlessly and so criminally handling such tools, in so many cases of practice. These facts may, in part, be novel to some of you, but they were so familiar as recorded by Laurence Sterne, that I have known students to go to the bookseller to purchase Sterne's Midwifery, just as I have known a practitioner solicitous to obtain Werner on Veins, a geological work, thinking it a treatise on blood-letting. But to our subject. In the early condition of our colonial government, the practice of midwifery was in the hands of women. Atwood, of this city, was the first who advertised himself as a male accoucheur, and he conquered prejudices, and upon the whole was successful. The miserable attempts which, from time to time, have been made, first in Boston, about twenty-five years ago, and then in New York, to reinstate this branch of our art in the hands of females, have wholly failed. Every day's additional science more strongly speaks of the blessings secured both to mother and child by the management of parturition being confined to the regular licensed M. D., and that the practice of obstetrics should exclusively be discharged by the hardier sex. The latest statistics show, that since the art has been appropriated by the male practitioner, the mortality from parturition has diminished one half. Dr. Bard was so impressed with the value of this department of study that, while he was content that two courses of instruction might answer for other branches, he deemed three requisite to qualify a conscientious doctor for practical midwifery.

It is not my province, on this occasion, to assume the responsibilities of instruction, yet I cannot withhold the expression of my opinion, that I consider the work of Denman, the most valuable that has yet appeared on the science of obstetrics, so far as concerns the natural history of labor. Nothing in medical literature has ever surpassed the descriptive talents of that experienced and conscientious writer on that most important subject. The tyro in medical responsibility is doubly armed if he have fully imbibed the description, the principles, and reasonings of Denman.

It were almost superfluous to say, on this occasion, that if any branch of your practice calls in requisition the humanities, the refinements and the courtesies of life, the elegances of cultivation and the sympathies of our being, it is in attendance on midwifery cases. Old Dr. Raynalde, who wrote the first book on obstetrics in England, entitled the " Byrthe of Mankind, otherwise called the Woman's Boke," invokes the nine muses of Mount Helicon with their poetic spirit to breathe thereon, and he says that none need be offended thereat, at what he has written; for even boys may open the book as a tale of Robin Hood. Among his remedies in dolorous cases, he mentions mollifying unguents and sweet words; this recommendation is founded on good reasoning, and has antiquity to sanction it. Dr. Bard was most strenuous in enforcing like language. And as a general rule of practice in our whole career of duty amidst physical suffering and anguishing results, Bard often said, mellifluous accents made a surer road to business, and was an adjuvant of much value. " A spoonful of honey," said Dr. Bard, " will catch more flies than a barrel of vinegar." Take it altogether, we have had in former times able teachers in midwifery, and as I have said before, the science was first dignified as a distinct professional course of knowledge in King's College, New York, when Tennant was professor. Among our successive teachers, we could boast of Rodgers, Hosack, Osborne, Macneven. I had the honor to hold the chair many years, both in the College of Physicians and

Surgeons and in Rutgers' Medical College, in connection with Legal Medicine. Since the revolution, by the resignation of the old professors and by collegiate reform, the office of instructor in that branch has been held by Dr. Delafield, whose successor is the present professor, Dr. Gilman. But you are largely favored in the means afforded you for the study of obstetrics. Our three colleges at this very time unfold the science theoretically and practically with opportunities of practical improvement, such as modern days only afford. You have Dr. Bedford, the experienced teacher in the Medical University, and Dr. Barker, in the New York College, Thirteenth street: in the Bellevue Hospital you can justly boast of the great clinical expositions of Dr. Barker, the last-named teacher, of Dr. Taylor, and of Dr. Elliot. Such opportunities for practical wisdom in this most responsible study, yield of themselves compensation enough for a journey hither.

There are peculiar advantages possessed by New York for the prosecution of another great and specific department of our profession, I mean mental philosophy, both in the sound and in diseased condition of the mind. The early German authors first awakened attention to this vast subject, though Paulus Zacchias, the Italian, may be pronounced prominent among the great expositors, and the father of the science: but Germany is filled with disquisitions on this great theme. Latterly, France, Italy and England have came forward with a profusion of works illustrative of the perplexing phenomena of disturbed or unsound intellect; and insanity has become a specialty both of private and national importance. As disturbed intellect constitutes a large chapter in medical jurisprudence, and as this last-named study is daily drawing increased attention, we accordingly find that almost all our colleges have a professorship on the subject. It however first began in this country, in this city, by the energy of my predecessor in that chair, Dr. James S. Stringham, of New York.

Young gentlemen, you know full well that the popular opinion has long prevailed that the members of the bar delight to perplex and confound the doctors when summoned at court; and you further well know that many an eminent medical man has suffered in public estimation from the manner in which he has delivered public testimony in criminal cases. Our own courts have often furnished examples of that sort, and the recorded evidence exists of like occurrences abroad. The great John Hunter made, on a memorable occasion of that nature, a sorry figure indeed. And if so preëminently renowned an anatomist prove delinquent, what chance has the ignorant of escape from censure and loss of professional estimation? Let, then, the student include among his studies the leading principles of medico-juridical science, and ever feel alive to the value of reputation, where he has so advantageous an opportunity of dignifying his profession. The late Thomas Addis Emmet, the great jurist of the New York bar, had been reared as a physician, and was strenuous in all criminal cases where death had ensued, to demand as a pre-requisite, that an autopsic examination be made of the brain. You are all aware that the greatest work on medical jurisprudence which the present age has produced, is that by

Beck, and that the able author was a native of this State, and imbibed his love of the science from the lectures he heard delivered here by Professor Stringham. Other Americans have added to the honor of their country by labors of a like nature, as Dr. Ray, of Rhode Island.

Shall I trespass on your hour a few moments longer? Your education and your common sense have, I am convinced, already led you to the belief that the science you have chosen for your professional life, is the most important in its several relations that can engage the faculties of man. What little I have already uttered, will not lessen your confidence in that belief. But I only reiterate what has been said a thousand times by abler men; yet I utter what I most conscientiously think. Metaphysicians have given to Locke the highest plaudits for his philosophy of the human understanding; and astute men of other studies will tell you that Sydenham deserves equal renown for his luminous histories of epidemical diseases. If you go back to the earliest date of our science, and encounter Hippocrates, you will find that the talent of observation was possessed by the father of physic equally as clear, precise and logical as at the period when Lord Bacon published his Instauration; so that the wisdom of this age is perplexed whether to assign to Hippocrates or to Bacon the honor of the invention of the inductive system of philosophy. Either view of the subject may perhaps be right; yet after all, what is the inductive system but an inference from facts or certain phenomena which follow certain preceding facts or phenomena. The truth is, the whole is the science of observation, which has been called in requisition from the earliest period at which man became an observer. The perplexities of the schoolmen had paralyzed the march of real knowledge, and Bacon brought them back to their original studies. Our Franklin was, I think, an inductive philosopher, equal to any of his predecessors; his Leyden jar was a true example of inductive reasoning; and were our American Solomon heeded with greater deference, the happiness of mortals would be more widely diffused, a loftier state of social relationship obtained, and a more harmonious coöperation manifest itself for the benefit of humanity.

It would gratify me not a little to notice at this time some of the leading characteristics of those celebrated men, whose writings you study and whose labors you desire to follow. This present age is so prolific of events in science generally, and in our profession in particular, that it renders a fair estimate of the advances made in the art of healing during the past age extremely difficult to arrive at. When I was a student in 1807, my preceptor, Dr. Hosack, tied the femoral artery for an aneurism; he thought it a great achievement, and so it was at that day, and the faculty among us were of the same opinion. It was indeed the first time that operation had been seen in New York; but what has surgery done since with aneurisms; our friend Dr. Wood, your clinical guide, I conjecture, would now take up that artery, without the use of eyes, and perhaps without hands. What has Dr. Mott, the veteran of surgery in this place, our Ambrose Parè, as I have sometimes called him, done in that line of business; it would demand a long time for me to recount his exploits in even that limited department of chirurgical skill, and how rich would be the pages of a discourse that set forth the surgical exploits of Mott, of Stevens and Post, of Van Buren and Wood, of Watson and Parker, of Detmold and Carnochan, of Kissam, and many others now on the stage of active life in our midst. When I was a student the system of chemistry taught here was the Lavoisierian ; I have since made myself partially acquainted with the nomenclature of Davy and Brande, and the atomic theory of Higgins and Dalton. Contemplate the body of chemical philosophy now related to you by your experimental expositors, Dr. Draper, Dr. Doremus, and by Dr. Joy, Dr. St. John, and by Dr. Gibbs. When you shall have fairly set yourself at study, examine the cabinets of the materia medica, at your hands. The philosophy of organic life becomes the basis on which you are to found your pharmaceutical principles and your therapeutical means. Say not that you are not aided in the solution of intricacies of the materia medica, when the learned and venerable adept, Dr. Payne, treats of life and its diseases, with the ability of a master, whose views on the nervous influences have enrolled his name among the proud list of modern discoverers. With every means to attain to practical results, by personal observation at the bedside, by the elucidations of the stethoscope, by auscultation, by autopsy, and by the prelections of your Dr. Metcalfe, your Dr. Clarke, your Dr. Greene, you must be indeed indifferent students if you are not clothed with the mantle of knowledge and ready to assume the rights awarded to the skillful in curative power.

You have before you, gentlemen, the programme of the three several colleges now in operation in this city, for the purpose of imparting knowledge in the art of healing. Yes, you have three distinct colleges, each of peculiar claims, furnishing instructors in the respective courses which are ordinarily given by medical schools, and to add to our admiration of the plan, one harmonious trinity characterizes the union in the brotherhood of science. It becomes the less necessary for me to dwell further on the opportunities you possess to render yourselves both learned in theories and wise in practice. The distinguished professors of these schools are men of labor, and they will tell you that without labor you will accomplish nothing. They will tell you that reading and closet study are mighty aids in furtherance of your designs, but with equal frankness they will testify with one accord, that your foundation for all beneficent purposes you contemplate in after life must be grounded on observation—that clinical instruction is the staff upon which you are to lean. Fortunate for them, yet still more fortunate for you, they have at command those precious advantages which enables clinical instruction to fortify its behests, and this leads me to remark that had the luminous proofs afforded by practice only, won the attention of practitioners of former days more generally, the world might have been spared many of those theories which have obtruded themselves upon our attention, absorbed our time, rendered study less profitable, and burdened our faculties. Yet I impugn not the motives of the mighty men who have honored our art by their devotion to its interests while controlled by speculations often the creations of partial study, imperfect observation and too hasty generalization. I cherish the divine art of healing and its disciples with too ardent a zeal to venture aught against the purity of their intentions, and the disinterestedness of their views. I am ready to grant that they held in reverence as a rule of life, the Athenian motto, "the object of life is to do good," and instead of deprecating the labors of our predecessors, I would laud them to the very echo. Candor, moreover, will lead us to affirm that their services, after all, advanced medicine, and if while the fathers of the church were descanting on the proper food for angels, and were tolerated by the best of men in so doing, surely with a sweet benevolence we can overlook the crude conceptions of empiricism and the vagueness of its theories. For my own part, I am ready to concede merits, many and great, to the ancient masters of the art, and to the physic of the Arabians; and while I think that Cullen has treated them with undue prejudice, I am ready to allow even to the quack-salver, Paracelsus, the title of a philosopher. There is another view of this subject. Close examination has often shown that the founders of untenable theories have often been good prescribers. The speculations of the closet, however endeared to them, have not always led them astray at the bedside; while a false renown may have tended to the formation of of the one, the grave responsibilities of life and death have actuated the other.

Believing, as I do, that the successive theories of medicine have each in their turn advanced our science, I would recommend to you, when you enter upon the practice of your art, to seize some moments of your leisure which as junior members of the profession you are likely to have, to turn over for perusal the pages of such men as Boerhaave, Hoffman, Cullen, Rush, and our late fellow citizen who did so much to ennoble the art, the late Dr. Hosack. He labored hard for principles in medicine, and some of his doctrines, particularly those on pestilence, though at one time sturdily rejected by nearly all his brother practitioners, have recently met with a reception which coincides with the declaration of the poet:

> "Truth, crush'd to earth, will rise again:
> The eternal years of God are hers;
> But Error, wounded, writhes with pain,
> And dies amid her worshippers."

There are no saints in the calendar that I venerate more than I do Haller and Boerhaavé, and when at Amsterdam I had visited the Anatomical Theatre of Ruysch, I repaired to Leyden, and bent to kiss the old marble effigies of Herman Boerhaave.

Justice to myself, as well as to you, demands that I should add, in this place, that in speaking of the theorists in our profession, the founders of systems, if you please so to characterize them, I do not wish to include a peculiar clan of modern speculators, who have risen up in these latter days with claims that have secured a short-lived notoriety, solely on account of their wild doctrines and their captivating conceits, obtruded upon the careless and the ignorant with an effrontery which might create the crimson blush on the cheek of Mesmer himself. They constitute an order not definable or capable of arrangement in any nomenclature. Possessing no centre or fixed point, their gyrations are incomprehensible to the observer, and indefinable by any rules. You will at once anticipate what I purpose saying. This heterogeneous compound includes the table-turners, the spiritualists, with clairvoyance, the disciples of animal magnetism, and the manœuverers of infinitesimal notions, and the *similia similibus curantur.* When you shall have become well acquainted with the philosophical history of your profession, you will be able conscientiously, because knowingly, to affirm that the temple of medical science has not as yet been enriched with one saving principle from the abettors of these sophistries; that what they proffer and deem valuable had long been known; that what possesses claims to novelty is untenable and absurd. And, indeed, this decision seems supported by a remarkable concurrence in the proceedings of all colleges restricted to medical science, for I believe throughout the land there is not selected as a teacher in a regular medical school, one individual, the recognized proselyte to the dogmas of Hahnemann. In Edinburgh there is, indeed, a chair occupied by an advocate of his principles. I infer, however, that its services for practical results in the curative art are very limited, judging from the expositions given to the world by that astute reasoner, Dr. Simpson, the able professor of obstetrics in the University of that metropolis. Be this as it may, my mature advice to you is, to let Hahnemann alone. I already see a decay in the number of the supporters of his doctrines. The golden calves who have been tarantulated by his mysticism, infest not the area of practical medicine as formerly; and the narcotized system, while it thins the ranks of its advocates, lessens in its survivors the oracular outcries of its merits, which once assailed us in such stentorian accents.

I could proceed for hours on the subject of your profession, its vastness, its responsibilities, the great good it daily achieves, the sufferings it mitigates and removes, the learning and science of its disciples, the services they have rendered the arts, in common life and in the useful and ornamental departments of mechanical skill, in domestic economy, etc. In a discourse delivered some time ago before the Academy of Medicine, I aimed to augment the stock of knowledge in relation to the men and their transactions in this country, and Dr. Cock, the present President of the College of Physicians and Surgeons, has, in his inaugural address, added further interesting information on New York matters. But it is requisite, before I close, to say, however much New York possesses profitable to your intentions, that the Union at large is gradually enriching itself with eminent medical and surgical men. Boston had her Warren; she still boasts her Jackson and Bigelow. Philadelphia has long held a mighty influence by her professors and her schools, and always points out her Rush, her Wistar, and her Chapman. Baltimore has long been the seat of medical learning, and of a university whose sons, like N. R. Smith, have increased her fame. Charleston has her Holbrook in natural history, and proudly announces her Dickson as a medical classic of rare judgment and sound doctrines. The exalted science also has great schools in St. Louis and in New Orleans, while the American Medical Association annually convenes a congress of talent of such laborers in the cause of Hippocratic science as Gross, Eve, Geddings, Stone, Fenner, Nott, Barton, etc., all of whom demonstrate that the tree of science in medical philosophy has taken deep root even in remote places of this wide-spread Union, and that Texas has already become a contributor to the same end by the investigations of that erudite man, Dr. Noel Smith.

I think I have already intimated that the medical literature of New York has been of such an order of merit as to command the esteem of foreign writers among different European nations. The New York *Medical Repository*, the first journal appropriated to medical science in this country, appeared so early as in 1797, by Drs. Mitchill, Miller and Smith. The nature of epidemical diseases has been expounded by a formidable corps of writers, among whom are Richard Bayley, David Hosack, Joseph M. Smith, and Peter Townsend, and monographs abound without limitation. If so be, that from peculiar circumstances you desire the philosophy of the times on the prolific subject of Hygiene, we can give you assurances that the press here has not been idle where Dr. Griscom has had an interposing influence.

Time admonishes me to bring these cursory remarks to a close, else I would detail at some length the history of our Bloomingdale Asylum for the treatment of the insane, a great institution, founded so early as in 1817, and in which the moral treatment of lunacy is carried out with gratifying success; and the Women's Hospital, recently organized for the special accommodation of cases of abnormal conditions, arising from accidents associated with the parturient state, or following the complexities of labor and instrumental delivery. This last-named institution, is as yet but in its infancy, but well-grounded hopes are entertained by its patrons, and the public generally, that the lapse of a little time will secure an ample organization, commensurate with the importance of the charity and the marvellous success which has thus far crowned its practice. The formidable nature of the infirmities treated in this hospital by its Surgeon-in-Chief, Dr. Sims, and the success which has followed, with perhaps not an exception, must command the approbation of the most skillful in obstetrical science, and call forth public countenance and pecuniary means from our constituted municipal authorities. The opportunities which I have enjoyed of witnessing the operative talents of that distinguished man, Dr. Sims, in the novel and intricate cases which find relief in the new temple of science, has led me, in common with other observers, to feel the warmest desire that its perpetuity may be secured.

Are you not, gentlemen, fully satisfied that in this city the means of knowledge are spread before you? that such an institution as our City Hospital, with its ripened glories of nearly three generations, is a school in which you may safely enter to hive wisdom? and do you not see from the walls of this theatre, where we are now convened, that the ample Bellevue Hospital before you contains materials that cannot fail to give you the qualifications of the accomplished physician, the dexterous accoucheur, and the confident and practical surgeon? Each day's experience in your walks through its ample and commodious halls and wards, will increase your stock of knowledge, awaken your admiration in the powers of healing, and magnify the claims which your respective clinical teachers seek to make on your confidence and regard. There is a good deal of honest truth in the old Horatian proverb:

Fortes creantur fortibus.

The student, whatever his native powers, is largely dependent on the talents of his teacher: the example of the master is of mighty influence in swaying the destinies of the pupil. We have had here, from time to time, quite a crop of sound Dutch doctors, made by Boerhaave; Cullen sent forth a prolific tribe of sound medical men throughout these colonies; the South is still filled by the disciples of Rush; and a large corps of safe physicians is scattered everywhere, instructed by Hosack. Cheselden at Chelsea, sent many a sound surgeon to London. Hunter equipped Wright Post, and John Abernethy and Astley Cooper are recognized as the successful teachers of Valentine Mott, whose zeal was enkindled with increased powers by the lofty examples of those master-minds, so that, if we heed the public verdict, the pupil has excelled his glorious instructors. I have sometimes conjectured that this Dr. Mott of ours was their crowning work; I am certain you cannot possess an abler consulting surgeon in your most embarrassing cases. Let a like aim be yours. Every department of your calling is provided with able guides and willing teachers. Your clinical instruction in practice with all its complexities, will be directed by such men as Prof. Clark and Prof. Metcalfe; your obstetrics have for elucidation, with clinical and practical remarks, Elliot, Taylor and Barker. Your surgery claims the clinical judgment and ample experience of one long eminent in chirurgical operations, Dr. James R. Wood, whom you know to be the efficient agent in organizing this clinical school.

In glancing around me, I see within these walls some of those city fathers who direct our public councils, and control our municipal affairs. They are not an idle body in the work of improvement: the advances of this city in the decorative arts, in medical police, in hygiene, and in the multiplication of institutions purposely erected for humanity, for science and general knowledge, have elicited the praises of the denizen and the stranger. To them I feel that acknowledgments are due for these blessings, and in an especial manner for the lofty pile of architectural display and internal convenience which Bellevue Hospital offers to our eyes. Our city fathers effected a mighty issue when they built the Croton aqueduct; the ample and elegant institution before us is worthy of such masters in the arts of design; let the enlightened Governor* of the Alms House department, who honors us with his presence, tell his associate members of the Board, that the afflicted inmates of the Institution feel daily the blessing bestowed by their liberal policy, while as brethren engaged in the highest duties of life, we entertain due reverence for their individual character, and to their noble works, so scriptural in beneficence, so cheering to scientific progress.

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* Governor Smith.

Gentlemen, I was once young—the case I think is now otherwise. The opportunities I enjoyed for medical acquisition with my able preceptor, Hosack, were very many, but not equal to those afforded at the present day. Fifty years have produced vast advances. But I have not been idle : my march is onward. Everything that enhances the medical art yields me additional satisfaction. I love to see the ripe scholar, and the accomplished prescriber, and the skillful surgeon. Let me urge you to seize every chance so abundantly at hand for practical improvement; fortify yourselves with conscious knowledge; so that your lives may prove, in the arduous career of your high duties, a solace to yourselves, and a blessing to the land. I will add no more, but my best wishes for your health, your happiness, and your prosperity. By faithful devotion, your livelihood is secured ; if more fortunate still, your means can readily find objects to gratify your love of doing good ; at all times remember the poor.

ART. VIII.—*Report of the Proceedings of Medical Societies and of Hospital Practice.*

NEW YORK ACADEMY OF MEDICINE.

REGULAR MEETING, JAN. 6, 1858, DR. BATCHELDER, *President.*

PROLAPSE OF THE FUNIS.

AN essay upon Prolapse of the Funis was read by DR. T. GAILLARD THOMAS, Physician to the Demilt Dispensary, N. Y.; the chief points of which we give in the following *résumé.*

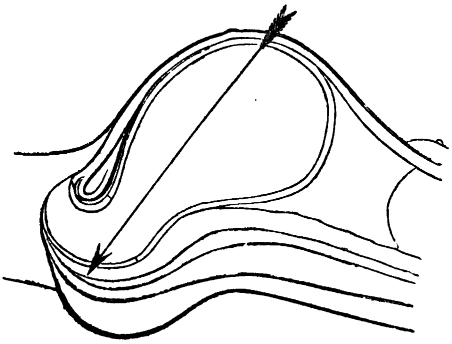
After touching slightly upon the literature of the subject, and the views entertained by the old writers on obstetrics concerning it, he entered into an examination of its frequency. According to the statistics adduced, it occurs about as frequently as transverse presentation, or about once in 250 cases. Monsieur Schuré, of Strasbourg, states it as occurring once in 265 cases, and Michælas as once in 287. The mortality attending the accident is, however, far greater than that of transverse presentation ; thus, in 355 cases mentioned by Dr. Churchill, 220 children were lost ; in 37 mentioned by Drs. McClintock and Hardy, 25 were lost ; and in 1,822 labors reported by Dr. Ramsbotham, as having given birth to still-born, 128 of the deaths were due to prolapse of the cord.

The subject of treatment was then entered upon, and all the means now in use were passed in review, as returning the cord by the hand, or porte cordon, and keeping it up by means of bits of sponge attached to it, or by inclosing it in a pouch of leather or soft linen, etc., etc.

Next, the employment of version and the forceps was examined into, and, lastly, the chances of success attending the practice of placing the prolapsed organ in some part of the pelvis where it would be free from pressure during the delivery.

The author then laid before the Academy a plan of treatment which he had proposed in a course of lectures on obstetrics, delivered in the University Medical College of this city two years ago, and which he had since taught, but had waited for clinical evidence before bringing before the profession. The causes of the great persistence of this accident, said he (whatever may have originally produced it), may be stated as these: 1st, the slippery nature of the funis; and 2d, the inclined direction of the uterine axis, which being a line running from the umbilicus, or a little above it, to the coccyx, favors very much the tendency of the slippery part to roll outwards. These conditions he had thought might not only be overcome, but might themselves be rendered serviceable in effecting reduction, by inverting the uterine axis by placing the woman on her hands and knees, in the posture employed by surgeons in operating on the uterus and vagina. The accompanying diagrams were employed in explanation. He had now tried this method in two cases, and reported as follows:

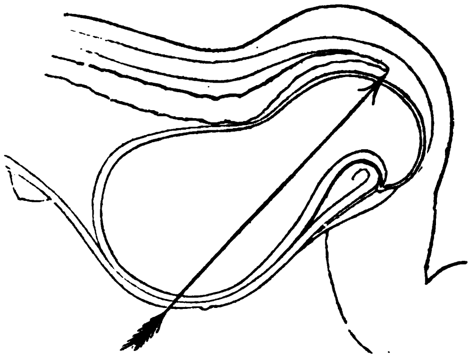
The first was a robust Irish woman, a multipara, who was sitting by her bed when the waters broke, and brought down a loop of the cord. It had been returned to the uterus repeatedly by the physician in attendance, and the porte cordon recommended by Dr. Ramsbotham was used to retain it. At each successive pain, however, it again prolapsed, and when he saw the case it was suffering from pressure by the descending head. He repeated the attempts which had been made by returning the cord, but, like them, his were unavailing. Placing the woman on the knees, with her face and chest resting upon the bed, he now proceeded to return the cord, when he discovered that without his aid it had retreated—and the labor proceeded without difficulty—a living child being soon born.



To the second case he was called before the waters had broken, and in the unruptured bag he detected the cord in large amount. As the os was fully dilated he ruptured the bag, and instantly the cord descended, and appeared to fill the vagina. Pushing it up beyond the head in an interval, he now waited to see whether it could be retained there during the next pain, but a large loop was at once forced down, and this occurred two or three times as the result of this attempt. The woman was now placed in position, and although the cord did not, as in the first case, reduce itself, no part of it once pushed up returned, and the labor was safely concluded.

In both these cases the woman was allowed to choose her position after the head had fully descended, and occupied the pelvic cavity.

The author, in concluding, expressed his regrets, that the plan proposed should not have been more fully supported by clinical facts, and stated as his reasons for bringing it forward in its present condition, the conviction which he felt that the simplicity of the method would at once recommend it for trial, and his desire cordially to invite the profession to test it, and give it its proper stand, whether of credit or of discredit, among the means at present at our command in treating this class of cases.



The rules of treatment pointed out were these :

1st. If the cord is detected before the waters have broken, let no manual assistance be offered, but place the woman at once in position, and trust to this for its return to the uterus.

2d. Should the waters have flowed away, and left the cord below the head, place the woman in position, and push it up with the hand if practicable, or with a porte cordon, consisting of a gum elastic catheter, with a tape passed through it, if not so—

3d. Let no manipulations be commenced until the woman be placed in position.

BELLEVUE HOSPITAL.

Report of the Second Surgical Division; (Dr. Ch. S. D. Smith, Visiting Surgeon). by Dr. F. A. Burrall, House Surgeon.

Two hundred and fifty-five cases of disease were treated in this division during the months above named, and among them were the following fractures and cases of interest :

1 compound fracture of skull ; 1 lower jaw ; 1 clavicle ; 2 arm (1 compound); 2 fore-arm ; 3 ribs ; 1 of acetabulum with luxation of thigh ; 5 shaft of femur ; 2 of leg (1 compound); 1 luxation of humerus ; 1 luxation of clavicle ; 1 radius at elbow-joint, forward ; 3 cases of stricture of urethra, 2 with urinary abscess ; a large hydrocele of two years standing ; carious abscess of tibia ; disease of the joints, rheumatic and strumous ; primary and secondary syphilis ; diseases of the eye and skin, and cases of minor surgery.

Fracture of lip of acetabulum.—James Hagerty, 28, Ireland, laborer, admitted October 20th. This patient was struck by a railroad driver weighing over a ton, and six feet high, the wheel grazing the right side of his back, and striking upon the upper and posterior portion of the hip-joint. The violence of the blow was somewhat broken by the falling of the wheel upon a wooden horse. He was driven forwards upon all fours, but rose without assistance, and could rotate his limb. He did not complain of severe pain upon admission, and could bear some weight upon the leg. There was one a half inch shortening, which could be reduced by extension, and on a careful examination, over the acetabulum a hollow was detected, while the trochanter was approximated to the antero-superior spinous process. The crepitus was bony, and very loud. The foot was inverted.

The patient was placed in the straight apparatus, and treated as for fracturing of the femoral shaft, and was discharged on Dec. 24, by his own request, being then able to move about easily upon crutches. There was no shortening, and very good motion of the hip-joint.

Injury of neck and head.—George Reed, 28, Irish, married, of good habits, was admitted to the hospital, October 12th. On the morning of September 13th, he fell backwards down a flight of fifteen stairs, and was taken up insensible. There was no paralysis, and he suffered only from a pain in attempting to raise his head, which he found impossible. Three wet cups were applied to the nape of the neck, followed by a blister, and a purgative of senna, and mag. sulph. was also given. He was able to return to his work on the second day, but on the day before his admittance to the hospital, he found it impossible, after lying down, to raise his head again.

There was pain and stiffness in the course of the left sterno-mastoid muscle, and a deep-seated pain over the lower portion of the occipital bone, most marked on the left side. The patient, in rising from his bed turns his face towards the pillow, and rises slowly, supporting his head upon the palm of his hand.

Treatment, consisted in a moderately antiphlogistic course. Cups and blisters to the nape of the neck, which relieved the stiffness of the neck, while severe pain still remained. This was relieved temporarily by a seton, but returned as severe as before. Quinine was administered, as the pain seemed of an intermittent character, but with no better success, nor was it alleviated by doses of racemosa acteæ.

Nov. 1st.—Patient complains of difficulty in opening his mouth, and swallowing, while sitting up. There is rigidity of the muscles on the anterior part of the neck. He cannot take his meals in the sitting posture, but finds no difficulty in mastication while lying down. The wine of the citrate of iron was given in such a quantity that the patient might take four grains *ter in die.* From this time he commenced to improve, and could move the muscles of the mouth and jaw with facility, but the improvement was very slow, and on the 9th November he was discharged by request, with considerable pain still remaining in the back of his head while in the erect posture.

Traumatic stricture of urethra—Perineal section.—Patrick Caniff, Irish, 52, laborer, admitted Oct. 9th.—This was a case of stricture of the urethra, following a fall astride a scantling. Immediately after the accident, blood passed per urethram, and there were some inflammatory symptoms, which subsided in four weeks. There was no solution of continuity of the integuments. Patient has also an inguinal hernia, on the left side, which he first noticed about a month after the accident. It is now about as large as the closed fist, and easily reducible. Since the accident, the patient has been troubled with pain and scalding during micturition. There is also at present a turbidity of urine at the beginning and end of micturition. On admittance, the the urine was passed guttatim, and with great difficulty.

Chloroform was administered, and ineffectual attempts made to pass an instrument. Suppositories of opium were introduced into the rectum, and mild laxatives administered, which facilitated the passage of the urine to some degree.

Oct. 17th.—Ether was administered, and perineal section performed by Dr. Smith. The stricture was over an inch in length, nearly obliterating the membranous portion of the urethra. A catheter was introduced into the bladder, and the wound left to heal by granulation.

The bladder was occasionally syringed out with warm water, the wound healed kindly, the urine became natural, and on December 26th the patient was discharged cured, the urethra, at that date, readily admitting a No. 12 catheter.

Stricture of urethra following gonorrhea, with extravasation of urine.—James Vickerey, 24, England, painter, single, admitted October 22d. Eight years ago patient was attacked with rheumatism and gonorrhea simultaneously. The clap was of five months' duration, was treated constitutionally, and by injections, and for a month after its cure the patient suffered occasionally from scalding during micturition. He says that he "caught cold" about five years since, during the night, and was unable to pass his water the next morning, except guttatim, and with great pain. Since that time he has been constantly growing worse, and is annoyed with a frequent desire to pass water.

The patient's constitution, on admission, was somewhat enfeebled, he was weak and pale. After some trial, a pointed elastic bougie was introduced for about a quarter of an inch into the stricture which commences in the bulbous portion of the urethra. Eight leeches were ordered to the perineum, and warm baths, with opium suppositories, at bedtime, were also ordered.

Oct. 27th.—At 8 P. M., while patient was at stool, he was seized with faintness, fell, and was assisted to bed. Soon after he had vomiting, followed by a chill. On the morning of the 28th, he was quite feeble, with a quick and small pulse. Hyd. submuriat. five grains, was ordered, to be followed by ol. ricini. At twelve, noon, patient went to the water-closet, and immediately afterwards was seized with a severe chill and vomiting. In three or four hours he went into collapse. Pulse was almost imperceptible, his face and lips blue and cold. He rallied after the administration of restoratives. In the evening his pulse was 150, small and hard; there was pain in the abdomen on pressure, the knees were drawn up, and there was constant vomiting of green matter. Small doses of quinine and morphia were ordered in pill, and were retained upon the stomach.

11 P. M.—Extremities cold; pulse not improved; patient seems moribund. Mustard poultices were applied to feet.

Oct. 29th.—Pulse rather stronger; abdomen still tender on pressure; toes of left foot quite black; vomiting constant. Ordered a pill of quin. sulph. two grains, pulv. opii. one grain, to be given every hour. At night patient slowly regains warmth; vomiting less severe; great tenderness over the kidneys, the quinine was omitted in the pill, which was still continued.

Oct. 30th.—Vomiting ceased about noon; takes pulv. opii half grain, every hour; stimulants continued.

Oct. 31st.—Reaction has become fully established. Patient complains of great pain all over his body. During the last forty-eight hours he has taken thirty grains of opium.

Nov. 1st.—Contrary to orders, patient got out of bed, and went to the water-closet. Half an hour later he was attacked with a severe chill, which lasted three-quarters of an hour, but was not followed by bad consequences; quin. sulph. one grain, was ordered *ter in die.*

Nov. 3d, 10 P. M.—Patient complains of pain in left testis, and left side of perineum; he says that while straining to make water at 7 P.M., he felt something "give way," and immediately began to suffer severe pain. An examination of the left side of the scrotum and perineum shows a hard swelling, apparently extending upwards along the ramus of the ischium. Patient was placed under chloroform, and after an hour's steady perseverance a No. 3 silver catheter was passed into the bladder. The perineum was incised at median line, and an opening made through the fascia to the urethra.

Nov. 4th.—Patient feels much better; pulse improved; skin soft and pleasant.

There was considerable sloughing in the region of the incision, and other incisions were made to facilitate its release. Poultices were applied to the scrotum and perineum, and stimulants were given freely. On the 9th November a violent diarrhœa set in, which yielded to a mixture of catechu and tannin, with pulv. opii. one grain, every three hours. His pulse, however, was 120, quick and small.

Nov. 13th.—Patient is improving slowly; discharge from scrotum and perineum is beginning to look more healthy.

From this date until Nov. 26th, the patient suffered much from irritability of the bladder. The No. 3 catheter was removed, and a No. 9 substituted, but at last it became necessary to remove the instrument and draw off his water several times during the day. The incisions into the scrotum closed kindly, but the opening into the perineum continued to discharge. A large abscess formed suddenly just below hip joint on the left side, which was opened, and several ounces of bloody pus were discharged. Stimulants and tonics were given *pro re natâ.*

December 10th.—A large abscess has formed under the glutei muscles of the left side, another under the adductor muscles of the right, and the third at the junction of the penis and scrotum. The one under the glutei was opened by a puncture which reached the ilium, and about six ounces of a very tenacious pus were evacuated. A compress was applied over the cavity. About an ounce of thin ichorous pus was also evacuated from the abscess of the scrotum. Subsequently, the abscess under the adductors was opened by a free incision, and another at the elbow, above the tendon of the biceps, was similarly evacuated. The formation of these abscesses was generally preceded by a chill. The patient's appetite is not very good; he eats an egg, or bit of chicken occasionally, and a little beef tea. He relishes porter, however, of which he takes three bottles daily, in addition to four ounces of brandy and four of port wine.

December 22d.—An abscess at junction of penis and scrotum anteriorly was opened, evacuating ℥ss. of thick pus.

January 18th.—At the present date the patient's general health is much improved. He has, however, a urinary fistula, opening externally, near the commencement of the scrotum.

January 31st.—Patient sits up and is convalescent.

Case of hydrocele and hematocele.—Anthony Ryan, Irish, aged 38, porter, married, admitted October 19th, has always been healthy, with no hereditary predisposition traceable, although of scrofulous appearance.

Two years ago left side of the scrotum began to swell, and was painful. There was an increase of these symptoms for six months, since when there has been no pain except in wet weather. About a year since the right side of scrotum began to swell also, following a similar course to the left. The tumor measures, at present,

Greatest horizontal circumference	23½	inches.
Half circumference of left side	15	"
" " of right side	8½	"
Perpendicular circumference of left side	21	"
" " of right side	17	"

The left side is much more tense than the right, and the penis is nearly obliterated. Fluctuation is distinct on both sides. The right side is translucent, the left opaque.

Treatment.—October 28th.—Both sides were punctured by Dr. Smith; forty-five ounces of bloody serum were drawn from the left side, and twenty-eight ounces of clear serum from the right; about an ounce of a mixture of equal parts of tr. iodini and water were thrown into the sac of the right side; the left sac was suffered to refill; patient suffered some pain.

November 10th.—The right sac is rapidly contracting, that of the left nearly refilled. An incision was made by Dr. Smith into the left sac, and a triangular piece of the tunica vaginalis excised; forty-four ounces of bloody serum, and a number of fibrinous clots were evacuated; the tunica vaginalis was very much thickened, and had lost its shining appearance; the cavity was syringed out with warm water, and dry lint introduced.

There were, as in the previous occasion, no bad symptoms; suppuration took place, and was followed by a steady decrease in the size of the tumor. On the 22d of December he was discharged cured, at which date suppuration had ceased, and the scrotum was reduced to about one third of its original dimensions. There was still thickening and hardness of the tunica vaginalis, and a redundancy of scrotum.

Traumatic abscesses about knee-joint, simulating synovitis.—Francis Clarke, Ireland, laborer, of scrofulous appearance, deaf and dumb from birth, admitted October 10th, 1857, said to be eighteen years of age, but appears much younger; genital organs quite imperfectly developed.

About the last of September, his sister struck him with a fork, just below the tubercle of right tibia; a day or two after it was noticed that he walked lame, but he would submit to no treatment.

When admitted, the knee was very much swollen, from two inches above patella to the same distance below tubercle of tibia. After a warm bath, six leeches were applied about the swelling, followed by warm fomentations. Had no appetite, but slept quite well during the night.

October 11th.—In morning there was a disposition in the swelling to separate into two parts; one below the joint, and the other on inside of patella. Eight leeches, four on each side of patella. In evening, swelling much diminished; tendency to separate more marked; not much tenderness on pressure; appetite improved; pulse 120, somewhat small and irritable; warm fomentations continued; bowels kept soluble with a solution of magnes. sulph.

October 12th—Morning.—Pulse 100, a little hard; slept well last night; pain about joint increased, much aggravated by pressure; swelling below knee distinctly fluctuating; has no connection with joint, or swelling on inside of patella; no perceptible fluctuation under quadriceps extensor tendon. 1 P.M.—Dr. Smith made an opening into lower swelling with sharp pointed bistoury, which discharged two ounces of pus; poultice. 5 P.M.—Pain much diminished; appetite good; pulse 132, soft and compressible; quin. sulph. and opium in small doses.

October 13th—Morning.—General appearance better; slept well during night; pulse 92, small and weak; skin cool; joint sensitive; fluctuation at inner side of patella quite distinct. 8 P.M.—Poultice to knee.

October 15th.—Pulse still weak; appetite good; joint not quite so sensitive; fluctuation very distinct; strong pressure being made over swelling at patella, forced an opening through the cellular septum which divided abscesses, and pus was freely discharged through the original incision. 5 P.M.—Patient has more fever than for two or three evenings previous; a bandage and compress over abscess; anodynes.

October 17th.—Abscess nearly evacuated. Joint strapped.

October 21st.—Straps removed. Patient allowed to sit up.

October 24th.—Some effusion in joint, which was again strapped and bandaged, and patient allowed to walk about.

October 26th.—Discharged cured.

Traumatic stricture of urethra—Urinary abscess.—Hugh O. Reilly, 27, Ireland, married, laborer, admitted November 23d.—This patient fell astride a scantling five years since, and struck upon the perineum, a little to the left of the urethra. There was some hemorrhage from the urethra. The physician in attendance had ordered a purge, and applied ice to the privates, and on the next day a catheter was passed, after which the patient had no difficulty in urinating. On the tenth day after the accident, he returned to his work feeling quite well. A few days later he was troubled with ardor urinæ, and noticed a small tumor at the left side of the scrotum. Difficulty of micturition increased, with growth of tumor. An instrument was passed, a few days subsequently, which seemed to burst the tumor from within, and allowed a small quantity of pus to escape per urethram, after which his urine was passed naturally for several days. From that time until four or five weeks since, the same set of symptoms have recurred, and have been relieved by the passage of the catheter.

He was at last obliged to give up work, and take to bed, with the swelling and dysuria much increased.

November 28.—States that last night he passed a great deal of water, and was very thirsty. At present he passes his water guttatim, and there is much swelling and bagginess about the perineum.

Treatment.—After careful effort of two and a half hours, during which the patient was under the influence of chloroform, a No. 2 sound was passed, and followed immediately by a catheter of the same size. About three pints of dark-colored urine were evacuated. An incision was then made in the median line, and a considerable amount of unhealthy pus escaped. Symptoms of irritation were treated with anodynes and stimulants, the catheter was worn in the bladder until it was necessary to remove it, and draw off the patient's water several times daily. There was great inflammatory œdema of the scrotum and prepuce, which was treated by free, deep incisions, and the parts soon returned to their usual size.

December 27.—Introduction of the catheter discontinued. Patient doing well.

January 9th.—Patient discharged.

Strumous abscess of tibia.—Edward Smith, born in New York, 15 years of age, was admitted to Bellevue, November 11th, 1857.

On the 10th of July last, he spent nearly the whole day in very cold water, without clothing, in search of oysters. During the morning, while in the water, he felt very cold, but continued his employment until late in the afternoon, when, in consequence of increasing chilliness, he was obliged to leave for home. When he arrived, he had a smart chill, and went to bed sick.

The next morning he was attacked with a very severe pain in the left ankle, and vomited somewhat. A physician was called, who prescribed nothing but the application of ice to the painful ankle. The pain increased ; the neighboring parts began to swell and be painful. For a week he suffered greatly, and the whole leg became very much swollen. His mother applied leeches, which gave him relief. At the end of two weeks the same physician was sent for, who, detecting fluctuation, lanced the swelling, and a very large amount of offensive pus was discharged. This also relieved him very much. During the following month, other abscesses formed and were opened, leaving fistulous tracts, from which small pieces of bone were from time to time discharged.

When admitted to the hospital, his general health was not seriously impaired. He had a good appetite, and slept tolerably well.

The lower third of tibia was greatly enlarged to twice its normal dimensions, and very painful when handled or touched. The integuments over the bone were red, inflamed, and undermined. Five or six openings were observed, which led, by tortuous tracts, deep into the bone, all directed down towards the internal malleolus. The probe revealed dead bone, and also the sides of these sinuses rough and grating, but no sequestra or loose bone discovered. The disease did not involve the joint, although very near it. The discharge from these openings was continual, and of a purulent character exceedingly offensive.

Saturday, November 28th.—Dr. Smith performed an operation, as for ordinary necrosis. The patient being under ether, a crucial incision was made, exposing the whole of diseased tibia. A trephine, applied at each extremity of the wound, and the portion between chiselled out, and all the sinuses laid completely open. The bone was found soft and carious. The cavity was loosely filled with lint, and left to suppurate.

December 30.—The wound is filling up with healthy granulation, and the patient, free from suffering, is rapidly convalescing.

Two cases of Traumatic Tetanus (DR. L. A. SAYRE, Visiting Surgeon), reported by F. A. BURRALL, M. D., House Surgeon.

Case 1.—Catherine Beirn, 23, servant, German, admitted Dec. 4th. The previous history, as learned from an acquaintance, was that three weeks ago she received a blow from a brick over the left eyebrow which rendered her senseless. She recovered from the immediate effects of the accident sufficiently to go out the third day after its occurrence.

About the sixth day her lower jaw began to grow rigid, and the spasm increased to such a degree that a knife blade could with difficulty be introduced into the mouth. On the eighth day she was trephined, and three or four pieces of bone, in all about as large as a ten cent piece, were removed. The frontal sinus was entered, and the external wound left open.

On admission, the patient was somewhat anxious, had a pulse of 96, a cool, dry skin, and symmetrical pupils of the normal size. Her intellect was not affected. The external wound had partially scabbed over, and gave exit to a slight discharge. The muscles of the lower jaw were somewhat relaxed, while those of deglutition and respiration were mainly involved. The patient complained of thirst, and made constant efforts to dislodge a yellow tenacious mucus which seemed to come from the vicinity of the larnyx. It would constantly appear between her lips, and she would tear it away with her fingers. Every effort to swallow brought on a violent spasm of the sterno-cl. mastoidei, the platysmata, and to a lesser degree the muscles of deglutition. There was no pain in the vicinity of the ensiform cartilage, nor did she give any evidence of acute suffering. Chloroform was administered with no marked relief of the spasm, and discontinued as the patient seemed very averse to its use.

Dec. 5th.—Condition about the same. Cannot drink beef tea, or brandy, but has a great desire for water. Ordered sol. morphiæ sulph. (gr. j.-℥j.) in tablespoonful doses after each severe spasm also enemata of beef tea, and sol. quiniæ sulph. About ℥ij. of tr. assafœtidæ were also ordered to be thrown into the rectum. Pupils are contracted.

Dec. 6th.—Pulse 112 in the morning. Patient more comfortable. In the afternoon symptoms of collapse occurred. The respiration was 77, sighing, pulse 140. Stimulants were administered, and patient rallied slowly. During the night of the same day, she perspired freely, and her bowels moved twice.

At about 9.30 A.M., patient complained of dimness of vision, and desire to sleep, against which she struggled. She attributed the drowsiness to the morphia, although her intellect was still perfectly clear, and there were no comatose symptoms. Her pulse was irregular as well as her respiration, and she suddenly became pale, and pulseless at the wrist. Her eyeballs were rolled upwards, and her breathing became very irregular, with an occasional deep inspiration. She sank back in bed apparently lifeless. The ready method was used, brandy was thrown into the rectum, and the patient rallied. She expressed a wish to go to the water-closet, and walked there and back with slight assistance.

At about 9.45 A.M., another collapse occurred, more severe than the first, and in spite of the assistance of the galvanic battery, artificial inspiration, and the ready method, there was no reaction.

Examination 48 *hours after death.*—Rigor mortis quite well marked. Body not at all decomposed. Calvarium removed. There was great congestion of the cerebral sinuses, and the superficial arteries were unusually developed. This was marked both at the superior portion and base of the brain. There was rather less fluid in the ventricles than is usual. Small red patches were scattered over the brain just beneath the arachnoid.

An examination of the external wound showed that the trephine had entered the frontal sinus, and was just internal to the supra orbital notch by its lower curve. A small fragment of bone, about four lines square, was found in the wound. It was impossible to prosecute the examination as far as could have been wished, and the body was consequently not opened.

Case 2.—Traumatic tetanus—Amputation—Trial of woorari poison—Death.—Owen Daly, Irish, laborer, admitted Dec. 30th. Eleven days before admission, while the patient was ascending a ladder it fell, and the palmar surface of the first phalanx, and ball of the right thumb, were torn open by a nail which caused a severe lacerated wound. Inflammation of the adjacent parts was followed by suppuration, and a week since an incision was made on the dorsal aspect of the thumb, which liberated some pus. Four days since he felt a stiffness in the muscles at the back of the neck, and this has been increasing up to the date of admission. The patient is strong, and apparently of good constitution, his countenance is anxious, his intellect clear ; he has a pulse of 80, natural in fullness. Pupils act well. Bowels have not moved for two days. The spasm involves the muscles of the jaws, neck, thorax, and abdomen. It is tonic with occasional exacerbations. There is some opisthotonos and a severe pain near the ensiform cartilage. He has suffered somewhat from a cough since the commencement of the disease.

The external wound is not healed. It has an unhealthy look, and is covered with a purulent discharge. It was decided to convert the lacerated into an incised wound, and chloroform was administered ; but, as the anæsthetic produced a violent paroxysm, and apparent cerebral congestion, it was discontinued. After having ordered an enema of soap suds and turpentine, it was finally decided to cut off the nervous communication between the wound and the spinal cord. Chloroform was again used with similar symptoms, and an incision was made completely around the thumb, just below the wound. It was then discovered that the joint between the first and second phalanges was opened into, and the thumb was therefore removed at the metacarpo-phalangial articulation. The wound was drawn together with sutures, and dressed with cold water. Anodynes, brandy, and beef tea were ordered in liberal doses.

Dec. 31st 9.30, A.M.—Patient has been dozing since 12, P.M. and is still drowsy. Pulse varies from 80 to 100, weak and rather soft. Bowels and bladder act naturally, but difficulty of deglutition is increased. A blister was ordered to the spine, and a tablespoonful of a 20 gr. solution of quin. sulph. every half hour, with an equal amount of brandy. Beef tea to be given ad libitum. At 12, A.M., a large teaspoonful of tr. cannabis indicæ was ordered to be given every half hour. Patient is steadily growing worse, has had five severe paroxysms, and the rigidity begins to affect his legs. He says his tongue is also affected. The extremities are cold, and the face livid ; respiration abdominal, and very humid. Arms not affected by the spasm.

8 P.M.—Two injections were given, but as a severe paroxysm was induced each time, he refused their re-administration, and

says he will endeavor to swallow his medicine. During the day he has continued drowsy, but no perceptible effect seems to have been produced by his medicine.

It was considered that this was fit case for the administration of the woorari poison, from its well known power of bringing on muscular relaxation ; and a watery solution of an extract of woorari (gr. 4–aq. ℥i.) was proposed. Ten minims ($\frac{1}{12}$ gr.) were poured upon a bit of lint which was applied to the wound. Respiration being 28, and the pulse 112. The patient was informed of the nature of the proposed experiment. In five minutes the pulse fell to 104, then a slight spasm occurring, it ran up again.

11.10.—Patient drowsy ; respiration, 26, pulse, 108 ; twitching observed in the wounded hand. 11.15, respiration 32, humid and jerking, pulse 104. 11.20, mouth was opened twice so as to admit introduction of the finger. 11.21, gr. $\frac{1}{16}$ in solution applied. 11.23, swallowed some warm brandy, producing spasm. 11.25, mouth opened very widely. 11.40, gr. $\frac{1}{8}$ in solution applied upon the incision on the back of the hand, the scab having been bared (much loss by spilling). 11.45, drinking some water nearly produced a spasm ; respiration 28, pulse 106. 11.50, able to bend the head forward. 11.53, some drowsiness, and sleep till 12, M. 12, M., patient feels better ; 10 minims were again applied ; respiration 30, much less humid, and more thoracic ; pulse 104, weaker. 12.17, respiration 32 ; a slight paroxysm. 12.20, respiration 36 ; easier and long drawn ; pulse 112 ; patient drowsy. 12.25, 20 minims, some spilled. 12.28, patient asleep ; breathing frequent, sometimes jerking. 12.48, for the last 7 or 8 minutes patient has been sleeping for most of the time. 12.50, bed-pan called for, and a greenish discharge evacuated, supposed to be the remains of the two injections administered since morning, viz., s. s. quiniæ (gr. 20) ℥ss., brandy Oss. and tr. cannabis ind. ℥ss. 12.55, a second discharge of the same kind. 1.0, respiration 34, pulse 100 ; Patient asleep ; the head before drawn rigidly back is now somewhat forward. 1.10, pulse 108. 1.17, bed-pan called for ; Patient sleepy. 1.27, respiration 31, pulse 100 ; 20 minims applied. 2.0, respiration 32, pulse 100 ; sonorous rales in the chest ; shrill on palpation. 2.5, 30 minims, bowels moved, discharge gelatinous, shreddy and offensive. 2.34, pulse 100, respiration 3, 25 minims applied ; respiration embarrassed, perhaps due to efforts in defecation ; an injection of beef tea not retained. 3.15, gr. $\frac{1}{16}$ applied in form of powdered extract. 3.30, a spasm, patient uneasy, breathing hurried, short and jerking. 3.40, gr. $\frac{1}{8}$ in powder applied ; pulse 102, respiration of the same character, and 44 during spasm. 4.0, gr. $\frac{1}{4}$; about this time became urgent. 4.10, spasms intense. 4.15, patient died in a very severe spasm, involving the whole body. During the paroxysm the action of the heart was very feeble and intermittent, as proved by palpation and the pulse. In the midst of it $\frac{1}{4}$ gr. was applied to the external wound, but with no effect. The pulse was felt for about 30 seconds after the cessation of respiration.

No post-mortem examination allowed.

PART SECOND.

CRITICAL ANALYSIS.

ART. IX.—*Lectures on the Diseases of Women.* By CHARLES WEST, M.D., etc., etc. Part I. Diseases of the Uterus. Philadelphia: Blanchard & Lea, 1857, pp. 316.

THE work now republished, is from the pen of a practised writer, an experienced hospital physician, and a conscientious man; and, with the sense of shortcomings so graceful in the faithful and accomplished student, is recommended by the author to "the kindly judgment of my professional brethren, as embodying the results of ten years of observation in the wards of a hospital, and of the honest attempt to gather from each day's added experience something more or better for the use of those who look to me for help and guidance."

The subjects discussed in twenty lectures are the following:

Symptoms of diseases of women; menstruation and its disorders; inflammatory and kindred affections of the uterus; misplacements, inclusive of inversion; uterine tumors and outgrowths; tubercular and malignant diseases.

One peculiar fitness brought by Dr. West to his task is his familiarity with the modern languages and literature, which allows no barrier to that comprehensive review of the literature relating to the subject; to which he evidently superadds a familiarity with the relations of the personal character of men to the value of their teachings.

The character of Dr. West's mind is evidently not that of a partisan; for while he is ready faithfully to maintain a position which he believes to be correct, he yet differs from others with reluctance, and with none of that polemical spirit so offensive in some of the doughty champions of the day.

And thus an examination of Dr. West's book gives every reason to believe that the caution with which he shrouds his allusions to the much vexed question of ulceration, will be laid aside whenever continued observation has emancipated him more fully from the spell laid on so many of the London men by the influence of Robert Lee.

Indeed, before endeavoring to give our readers an insight into the many merits of this work, it may be well, *in limine*, to show more fully the views of Dr. West on this subject.

He thus sums up his views:

"1st. Uterine pain, menstrual disorder, and leucorrhœal discharges—the symptoms ordinarily attributed to ulceration of the os uteri—are met with, independently of that condition, almost as often as in connection with it.

"2d. These symptoms are observable in both classes of cases, with a vastly preponderating frequency at the time of the greatest vigor of the sexual functions; and no cause has so great a share in their production as the different incidents connected with active exercise of the reproductive powers. But it does not appear that ulceration of the os uteri exerts any special influence, either in causing sterility or in inducing abortion.

"3d. While the symptoms are identical in character in the two classes of cases, they seem to present a slightly increased degree of intensity in those cases in which ulceration of the os uteri exists.

"4th. In as far as could be ascertained by careful examination, four-fifths of the cases, of either class, presented appreciable changes in the condition of the uterus; such as misplacement, enlargement, and hardening of its tissue, while frequently several of these conditions co-existed. An indurated and hypertrophied state of the cervix uteri, was, however, more frequent in connection with ulceration of the os uteri than independently of that condition.

"5th. The inference, however, to which the last mentioned fact would seem to lead, as to the existence of some necessary relation, such as that of cause and effect, between ulceration of the os uteri and induration of its cervix, is, in great measure, negatived by two circumstances, 1. That in numerous instances an indurated cervix co-existed with a healthy os uteri. 2. That, while in many of the cases in which induration of the cervix existed, the ulceration of the os was very slight, induration was entirely absent in other instances where the ulceration was noticed as having been very extensive.

"Since then, we find that a very great degree of resemblance exists between the two classes of cases; that women, of the same age, of similar circumstances, present the same symptoms, leading to the same results, having the same duration, and attended with the same structural changes, whether ulceration of the os uteri be present or absent; it may fairly be inferred that ulceration of the womb is neither a general cause of uterine disease, nor a trustworthy indication of its progress; and it follows, I think, as a necessary corollary, that the endeavor by local remedies to remove this condition of the os, is not the all-important object in the treatment of uterine disease, which the teaching and practice of some physicians would teach us to believe." P. 103.

These, however, are the local means which Dr. West finds himself obliged to resort to in some cases.

"The vivid red appearance of the os uteri, associated with more or less extensive abrasion of its surface, and a slightly granular appearance, which is not unfrequently met with during the more active stages of these affections, for the most part alters its character, loses its vivid color, and finally disappears under the local depletion which the state of the uterus generally calls for. Sometimes, however, it continues, its granulations become large, soft, very vascular, and bleed easily, while the surface furnishes a very considerable quantity of glairy discharge. In this state, the os and cervix uteri are usually tender, sexual intercourse is painful, and is often followed by a little bleeding. This condition, like the swollen and granular state of the palpebral conjunctiva, with which we are familiar in the purulent ophthalmia of young children, is generally much benefited by extensive scarifications, which may be followed by the daily application of powdered alum, on a piece of cotton-wool, soaked in a strong solution of alum. By means of a piect of thread, tied to the cotton-wool, it can be removed by the patiene herself, in the course of a few hours, though it must always be introduced through the speculum. In the greater number of instances, the state of the os uteri becomes so much improved in four or five days, that this mode of treatment may be then dispensed with, and the sedulous employment of strong astringent injections will usually suffice to complete the patient's cure. When this is not the case, but the morbid condition still continues, more powerful applications may be needed. The nitrate of silver is not, in general, suitable in these cases, for its application is often followed by pain and also by bleeding. The acid nitrate of mercury, both in this instance and, also, whenever a strong caustic is required, has seemed to me the most useful application; and, with moderate care, its employment is unattended with risk. When it is used, however, the patient must lie on her back, and one of Coxeter's bivalve speculums being introduced, so as thoroughly to expose the os, and include the cervix, a little cotton-wool must be carefully disposed all around the edge of the speculum, so as to absorb any of the superfluous acid, and to prevent it from running down outside the speculum, and thus injuring the vagina. A brush can be easily extemporized, by trimming a little piece of cotton-wool after it is placed in the holder, and the whole diseased surface may then be painted over with the caustic, which immediately forms upon it a white eschar. A piece of dry cotton-wool now pressed against the part, will absorb any superfluous caustic; the little strips placed around the edge of the speculum may then be removed, and the speculum withdrawn. An additional precaution, however, which it is well to take, consists in introducing, before the withdrawal of the speculum, a piece of moistened cotton-wool up to the os uteri, whence it may be removed in the course of a few hours, by the patient. It is seldom that either pain or bleeding follows this application; and, at the end of a week, the eschar will usually be separated, the surface will be found to have lost its fungous character, and cicatrization to be commencing at its edges. A zinc lotion of about five grains to the ounce, or the black wash, employed as a vaginal injection, twice a day, will now generally be sufficient; but, sometimes the surface puts on an indolent character again, and it may then be expedient to touch it once or twice with the nitrate of silver, and I have occasionally found it necessary to repeat the application of the nitrate of mercury.

"Another state, which I have but rarely met with, but which seems usually to call for caustic applications, is one in which the os uteri is the seat of a distinct ulcer, with sharply cut edges, its surface apparently a little depressed below the adjacent tissue, partially covered by a thin layer of dirty yellowish lymph, but red and bleeding on its removal. This condition has usually come under my notice in women whose previous history afforded evidence of syphilitic infection some months before, and it has generally disappeared rapidly under one or two applications of the nitrate of mercury.

"Besides the two above-mentioned conditions of the os uteri which are those that oftenest seem to call for caustic applications, I have in other instances employed them, almost empirically, where I have found ulceration, or some allied morbid condition of the os uteri to exist, independent of any appreciable disease elsewhere, or where a morbid state of the os has persisted, after the other symptoms of uterine ailment have been subdued. Neither the one nor the other of these cases has, however, seemed to me of frequent occurrence." P. 119.

We have been careful to extract thus largely from Dr. West's views on these points, because they refer to the most frequent class of uterine diseases presented to the profession, and we trust that the following criticism may be considered justifiable.

1. That Dr. West, in his belief that inflammatory conditions of the body and cavity of the uterus are the most important and earliest in pathological sequence, does not in reality present views differing materially from those which advocate careful local treatment of lesions exhibited by the speculum ; for the manifestations acknowledge the same cause, and are often amenable to the same treatment ; local depletion or stony caustics, curing all sometimes, and at others leaving, as Dr. West has shown, local lesions demanding special applications.

2. That it is unfair to class the advocates for local treatment applied to the os and cervix uteri, as endeavoring by these means to remove affections of the os and cervix alone; since reduction of uterine volume, and removal of the whole attendant train of morbid sympathies, enter fully into their design.

3. That, whereas symptoms identical in character, become more intense when ulceration exists, according to Dr. West's own showing, while also under these circumstance induration and hypertrophy are more frequent, it may justly be claimed that, in a large proportion of Dr. W.'s cases, where induration did not co-exist with ulceration, that this lesion had existed before Dr. West's examination; for on page 111 will be found a case of induration of the cervix, in which "abrasion" temporarily showed itself even under the advantages of Dr. W.'s treatment.

4. That the absence of induration in some cases of extensive ulceration cannot be urged against the importance of the ulceration itself, for the reason that we do not yet know why certain ulcerations become indurated and others do not, and we, therefore, cannot yet thoroughly estimate the respective value of loss of tissue with or without accompanying induration.

5. That while it is unfair to stamp men relying more on local treatment than Dr. West, as giving attention to "ulceration alone," it is equally unfair in Dr. West to disguise this lesion in his own cases by such roundabout description as "that peculiar granular abraded appearance," or that "vivid red appearance of the os uteri, associated

with more or less extensive abrasion of its surface, and a slightly granular appearance,"—terms by which some men in London seek to describe appearances, which the mass of the profession can only recognize by the simple word—ulceration.

Moreover, Dr. W. is driven to attribute the benefit derived from application of caustic to the general increased care and management of the case ; and argues that the very necessity for local treatment embitters, to some extent, the woman's subsequent life, from apprehension of its reëmployment; while elsewhere in his book he alludes to the captivating character of mechanical views of dysmenorrhœa. Certainly, theories which demand local treatment cannot differ much in their mental effects.

According to our individual experience, it is a comfort to a woman to know that distressing symptoms, vague and uncertain in their character, are due to a local cause, and are to be relieved by local treatment. One well marked case occurs to us at this moment of a patient confined under our care in 1854, who, eighteen months after, presented herself with a large ulcer of the os uteri, with the attendant dysuria and other symptoms, and was entirely cured by leeching, cathartics, and the nitrate of silver. Last winter she came again, saying " that she had the old trouble she was sure, and wished to get relieved as soon as possible;" and a relapse being recognized, she was gratified with a similar result.

It is a disagreeable thing to say to a patient, you have a fibrous tumor growing out from your womb, the development of which cannot be checked or foreseen; or you have an ovarian tumor commencing, the issue of which is uncertain; or you have incipient malignant disease; but it seems to us that with such contingencies depending on an examination, it is a relief to physician and patient when we can simply say, you have some acute or chronic inflammation of the neck or body of the womb, or of both, with or without ulceration, depending on such or such a cause, which I can relieve, or cure now, but which may come back, and can again be as readily cured by methods determined upon by the same intelligent means.

Our author's recommendation to introduce the speculum with the patient lying on the left side, notwithstanding his admitting that the os uteri falls more readily within the focus when the patient lies on her back, that light is thus more thoroughly admitted, and that certain applications are only thus to be made—smack of the same unnecessary refinements that induced him to seek expressions that would relieve him of the necessity for pronouncing the word ulceration.

The only argument against introducing the speculum in the manner admitted by our author to be the best is, " that its apparent indelicacy is so serious an objection."

But these peculiarities do not originate with Dr. West, they are the deferences insensibly paid by a man of good feeling and amiable character to the prejudices of his seniors, and we confidently expect that the great merits of Dr. West will enable him to shake off such weaknesses as we have signalized, and ask himself " what mighty difference can there be 'twixt tweedledum and tweedledee." Certainly Dr. West in Wimpole street need not impress his students with the fanciful idea of the indelicacy of using an instrument in a manner constantly employed by Professor Murphy, in Henrietta street, and Dr. Bennett, in Grosvenor street. The difficulties certainly must be created by the physician, not by the patient.

In his directions for introducing the speculum, Dr. W. does not give a practical rule, which is of great service, viz., pressing down the perineum with the instrument; you gain space in this direction, as the child's head does in pushing back the coccyx.

The value of the uterine sound is justly set forth in these pages, and in no instance under Dr. West's observation have dangerous symptoms resulted from its use. In our own practice no examination of an unimpregnated uterus is made without introducing the sound, for the impossibility of otherwise appreciating the volume and direction of certain uteri cannot be denied. On one occasion, after its introduction, a patient had a hysterical epileptic convulsion, accompanied with discharge of urine, which, however, soon ceased, and gave no further trouble. In another case, occurring to Dr. Isaacs, the simple introduction of the sound was followed in the course of the day by severe hœmorrhage, without the discovery of any disease which could account therefor. These are the only instances of evil effects with which we are familiar; but the difficulties signalized by Dr. West, in the introduction of this instrument, where ante-flexion, or fibrous tumor in anterior or posterior wall, or retroflexion, interpose obstacles sometimes insuperable to Dr. Simpson's sound, may, we believe, be better overcome by an instrument just made by Tiemann, after a French model, than by any other. This is a No. 10 flexible catheter with a stylet which can be flexed to an exaggerated curve by a screw in the handle. With this, the direction can be changed at any moment, at any given point, without the necessity for losing the ground already gained. Moreover, flexions can be thus reduced without making the cervix a fulcrum for leverage, and, in short, you have the advantage of a slender finger within the organ, which you can flex at will.

We were enabled, by the aid of this instrument, to diagnosticate an anteflexion of the uterus, the probable cause of dysmenorrhœa, where our best efforts had failed to introduce Simpson's or Atlee's sound beyond the os internum, and when the diagnosis was thus made, reversing the screw, straightened the organ, and proved the absence of adhesions; in this case stricture of the os internum had been diagnosticated.

Our author does not dwell on the treatment of dysmenorrhœa depending on flexions of the uterus, yet in speaking of acute inflammation of the unimpregnated uterus, he describes a case where 1℥ of pus was found in the cavity of the organ, apparently retained there by flexion of the body on the cervix.

The value of Dr. W.'s advice in regard to suppression is keenly appreciated by the reviewer, who was so misled recently, as to prescribe a tonic course of treatment of amenorrhœa without examination, nor were his suspicions awakened until, *when sent for one morning, he saw a five months fœtus in the chamber.*

"You must not allow your respect as men, your gallantry as gentlemen, to quite lose sight of what may much import you as physicians." In the case referred to, after seeing the fœtus, we examined the areola, and squeezed milk from the nipple.

Intra-uterine injections are not used by Dr. W. in leucorrhœa, nor does he refer to the method of introducing medicated ointments within the uterus, which produce all the benefits to be derived from topical applications in this locality, without their risks ; he, however, recommends astringent injections in menorrhagia which the plug fails to relieve.

The mechanism by which prolapsus is produced will well repay attentive perusal, and he signalizes a result referred to by Kiwisch and Virchow, of diseased kidney, resulting from obstruction to the flow of the urine through the ureters in prolapse of the bladder.

The question as to the employment of mechanical support is thus summed up : Mechanical support not suitable. 1st. "In slight degrees of uterine prolapse. 2d. In cases where the descent of the womb, still comparatively recent, is due to the persistence of the state of puerperal hypertrophy, owing to imperfect involution of the organ after abortion or labor. 3d. In cases where uterine disease, of whatever kind, was the occasion of the misplacement of the organ, such disease being still in a stage calling for treatment.

On the other hand, mechanical means of some kind or another are generally appropriate :

1st. In all cases of external prolapse, or procidentia of the uterus.

2d. In cases of long standing prolapse, in the second degree, associated with much relaxation of the vagina, and consequent weakening of the uterine supports.

3d. In all cases of extensive laceration of the perinæum, and, for a similar reason, in cases of prolapsus in the aged.

4th. In cases of the minor degrees of prolapsus, which are accompanied by extreme distress, or violent pain.

5th. In all cases of considerable prolapsus of the vagina, with or without descent of the rectum or bladder ; and in all cases in which prolapsus is secondary to any of those other forms of displacement."

Dr. W. does not allude to Meig's pessary; seems to incline to the globular form, and lays more stress on the use of sponge than is customary of late years. Hull's utero-abdominal supporter receives a passing commendation, and Baker Brown's operations merit approval.

It will be interesting to note how far the permanent results of these ingenious operations will prove their superiority over those for contracting the vaginal canal. The recent article in the *Lancet*, by one of Brown's former house surgeons, although marked by bad temper and taste, yet suggests grave doubts as to the reliability of the reported success.

An annoying class of cases to treat is one in which prolapsus co-exists with phthisis, and where the expulsive cough drives everything before it. Inhalations with Meig's pessary, have here given us the best results.

The subject of uterine deviations is treated in a temperate, calm manner; and while recognizing the necessity for their careful diagnosis, and the great difficulties sometimes attending it, his treatment consists in reposition, when practicable, by the sound, and then in combating general symptoms, leaving the displacement to take care of itself, without any mechanical contrivance. This decision was reached on account of their irksomeness, the necessity for frequent examinations, the possibility of their becoming painful, dangerous, or fatal, and the liability to relapse, with the possibility of the symptoms remaining after cure of the deviation.

Dr. West has not, however, given these methods of treatment a fair practical trial.

The subject of uterine tumors and outgrowths, is discussed by Dr. W. in a very able and instructive manner. The question of enucleating fibrous tumors is thus answered :

"If now, to the published mortality, we make some addition for suppressed, or at least, non-reported cases, we arrive at a result which compels us to class the operation among the most hazardous in surgery. These risks, too, be it observed, are incurred not in case of a disease surely and rapidly destroying life, but of one that runs a slow course, that often comes to a stand-still of its own accord, and that almost always affords a prospect of months or years of valetudinarianism indeed, but still of life, which the operation may cut short in a few days. Success, on the other hand, by no means frees the patient from her ills; for fibrous tumors are but seldom solitary, and the removal of one may but serve to bring to light the existence of another beyond the reach of surgical interference."

The preference is given to excision of polypi over their ligation, on the ground of greater ease, speed, and safety.

Equally admirable with the article on misplacements and tumors, is that on cancer, for a sketch of which our space does not suffice—and we will close with the simple statement, that Dr. W. has never seen a case of genuine scirrhus of the uterus ; has only seen three or four cases in the last ten years, in which he considered amputation of the neck justifiable, and in the only one in which it was performed, the patient died in eight months.

The internal use of gallic acid is relied on in hemorrhage. In some cases of soft medullary or epithelial cancer, breaking down the tissue with the finger, and then injecting with the tincture of the sesquichloride of iron, has proved beneficial in his hands. In addition to astringent injections ʒj. of dilute nitric acid to Oj. of water, ʒj. of the sulphate of iron; ʒiij. of the extract of conium to Oj. of water ; ʒj. of creasote to the pint of mucilage, ʒj. to ʒss. of the nitrate of silver in ℥j. of water are recommended. The latter injected in the diseased tissue, destroys bad odor, and hastens separation of slough.

We must now conclude this hastily written sketch, with the confident assurance to our readers, that the work will well repay perusal. The conscientious, painstaking, practical physician is apparent in every page; and while the work opens no new path for investigation, and displays no great force of character, it does present information on these subjects, which will be new to a very large class of men who dabble in these diseases.

In the criticisms which we have ventured to offer, we have not designed in any way to impugn the value of the book; for the state of the vexed questions in that latitude is just now obscured by a peculiar London fog, from out which no man is surer to emerge more safely, and with greater credit, than Dr. West. G. T. E., JR.

ART. X.—*Diagnostik der Tumoren des Uterus ausserhalb der Schwangerschaft und des Wochenbetts.* Von Dr. B. BRESLAU. München: Christian Kaiser, 1856.

Diagnosis of the Tumors of the Uterus in Non-pregnant Women. By B. BRESLAU, M.D., of Munich. Munich: Christian Kaiser, 1856, pp. 65.

DR. BRESLAU, though a young man in the profession, is already well known by his few select articles on obstetrical and gynæcological subjects. In his last work on the *Differential Diagnosis of Uterine Tumors*, the author intended to give a short synopsis of the physical signs by which we might be enabled to detect the nature of the different tumors in connection with the womb; the word "tumor" being taken more from a clinical than a mere anatomical point of view. All abnormal swellings of the uterus, such as simple hypertrophy, fusions, and dislocations, are included in the discussion.

After some preliminary remarks on the anatomy and physiology of the neck of the uterus, the *œdema* of the portio vaginalis is first taken into consideration. It is always the consequence of obstructed circulation in the veins or the lymphatics. At the beginning of the infiltration, the neck of the uterus feels soft, but soon becomes hard and solid. While the swelling is soft, it can be diminished by tapping it with a small trocar; but at a more advanced state, no fluid escapes from the opening. When examined with the speculum, the tumor appears to be smooth, quite white, or tinged with a bluish hue, and in a few instances a number of enlarged vessels are apparent underneath the epithelium. The tumor, in consequence of *purulent infiltration*, is hot, painful, smooth, with perceptible fluctuation, generally confined to one lip. The neck is sometimes considerably enlarged by a *hemorrhage* in its tissue. At the beginning, this tumor presents a fluctuation, but afterwards a peculiar noise, if pressed with the finger, similar to that connected with hemorrhages in the cavities of joints, in the scrotum, in muscles, etc.

The *chronic induration* of the neck is owing to a hypertrophy of the elastic cellular tissue, and of the few muscular fibres connected with the structure of this part. The hypertrophy of both lips generally takes the shape of a bung, and is more frequently met with in young sterile women, often connected with stenosis of the orificium externum, and enlargement of the canalis cervicalis.

The *snout-like hypertrophy* of one lip, we find mostly in women who have had children. The hypertrophy of both lips has often been mistaken for prolapsus uteri.

The *glandular hypertrophy* is an occlusion of the orifice of the mucous bags, situated in the cervical canal, and near the external orifice, in consequence of which the free issue of mucus is prevented, which, by accumulating, enlarges and thickens these membranous glands. In examining with the finger, it feels as if it touched a raspberry, and they appear to the eye as white, shining little cysts. The so-called ovula nabothi, as found in almost every uterus, are very likely nothing but pathological structures, *i. e.* obliterated mucous bags, or newly-formed cysts. These hypertrophied glands sometimes grow as large as a walnut, and when stalked, are called vesicular polypi. Glandular hypertrophy, connected with ulcerations, papillar hypertrophy, and induration of the neck of the uterus, has frequently been mistaken for commencing carcinoma, and after being removed with the knife, has been reported among the successful cases of operation for cancer uteri.

The *carcinomatous* degeneration of the neck may be scirrhus, fungus medullaris, epithelial, or colloid carcinoma. In the non-ulcerative stage of the disease, the diagnosis is connected with so many difficulties, that the greatest men in the profession have committed the most serious errors. The anatomical characteristics of the disease are as follows : in one or both lips are imbedded several small, hard, tuberculated, partially isolated, partially fused, tumors, and between these are found numerous ulcerated places, with a hard, sandy basis, and with swollen rejected, sharp edges. In the great majority of cases, the uterus has lost its mobility. The basis of the ulcers is often covered with condylomatous discolored granulations, which are inclined to bleed upon the slightest touch, while the non-ulcerated cancer has no peculiar color. The distinction of a pseudo-carcinoma (cancroid, epithelioma) from a true cancer, is impossible during life.

Dr. Clarke's *cauliflower-excrescence* is not a carcinomatous disease, but an enormous vascular tumor, a prolongation and hypertrophy of the papillar blood-vessels, connected with a formation of new capillary vessels, surrounded by a dense cellular tissue, and covered with a thin layer of epithelium.

Among the tumors of the uterus, *hypertrophy* (*engorgement, infarctus*) is first treated of. It is either an imperfect, regressive metamorphosis after childbed, or the consequence of a repeated metritis. The diagnosis of interstitial fibroids, from partial hypertrophy, is not possible during life; while the treatment, which is the same for both diseases, when it proves to be useful, is a sign that the case was one of hypertrophy. In *ante-flexio uteri*, the upper lip is generally somewhat enlarged. In most cases the probe, as a means of diagnosis, is unnecessary, though indispensable in many cases. The diseases which may be mistaken for *retro-flexio uteri*, are hypertrophy of the posterior wall of the uterus, pelvic abscesses, ovarian cysts, fibroid tumors, and carcinoma. The introduction and movement of the probe, *en tour de maitre*, is often necessary in dubious cases. The diagnosis of *ante-versio* and *retro-versio uteri* are not at all difficult. The dysmenorrhœa, neuralgic pains, sterility, the symptoms from the bladder and rectum connected with these displacements of the womb, are very variable, and only show that there is a disease of the womb, but without distinguishing its nature. Moreover, they often refer to co-existing inflammation, ulceration and hypertrophy.

With *hydrometra,* the finger often detects an atresia of the external orifice, or even higher up ; and the tumor is often diminished by the spontaneous or artificial discharge of a slimy fluid. If the internal orifice is closed up by a flexion or stricture, and an atresia of the external orifice is present, the natural discharge of mucus is prohibited and retained in the lower section of the womb, in consequence of which the uterus attains the shape of an hour-glass. (*Uterus bicameratus vetularum Mayer, Rev*).

In diagnosis of *hæmatometra,* a puncture with the trocar is the best means of removing all doubt, which puncture, however, must be made of a very small size, because it often happened that in a rapid discharge of the blood, the latter was driven, by the sudden contraction of the uterus, through the previously dilated tubes into the cavity of the abdomen, thus occasioning a violent and fatal peritonitis.

Physometra seems to be always the result of gases coming from blood, pus or vapor in decomposition, which could not find its way through the orifice of the uterus. The so-called ructus vaginalis (rot vaginal), as often spoken of by patients, cannot be relied upon as an unfailing symptom, because at times flatus from the rectum are mistaken for it, or they willingly deceive their physicians by placing a caoutchouc bag in the vagina, and thus produce the sound in question. Sometimes, also, a discharge of gas from the uterus is owing to a fistular connection between the womb and one of the intestines, in which case fæces may be found in the uterus.

Stony concretions in the uterus have a double origin, viz : from an intrauterinal lithopædion, or from metamorphosed fibroid tumors. The spontaneous discharge of stony particles, or the touch with a metallic sound, are sufficient for diagnosis.

The diagnosis of *interstitial fibrous tumors* is surrounded with great difficulties. Its diagnosis from partial hypertrophy can only be ascertained *ex juvantibus et nocentibus,* in the great majority of cases. If we are induced to believe that a *fibroid tumor* is present *in the cavity of the womb,* it is necessary to dilate the cervical canal by bougies, dilators, compressed sponge, or incisions, in order to confirm our diagnosis, and to promote its expulsion.

Polypi of the womb, *when descended into the vagina,* have sometimes a deep and large ulceration on their most prominent portion, which has often been mistaken for the external orifice of the womb, and the case taken and treated for a prolapsed hypertrophied uterus. Their distinction from inversio uteri has puzzled the very first men of the profession. The symptoms of inversio uteri appear, in most instances, suddenly after difficult labor, incautious removal of the placenta, etc., while a polypus wants a comparatively considerable length of time for its development, size, shape, and color, are often in both affections the same; while the uterine probe may be advanced as far as 2½″ and more in polypus, which is impossible in inversio uteri In many cases of inversio, the absence of the body of the uterus in the abdomen may be ascertained by means of the double touch per rectum and hypogastrium. Malgaigne's test, with a male catheter introduced into the bladder, wants its sanction by experience. The tumors in both diseases are inclined to increase and decrease by turns. A uterus which has been inverted for a considerable length of time, may lose its sensibility; while a polypus, when lined with a healthy mucous membrane, may be sensitive to the touch. Sometimes it is possible to detect the internal orifice of the Fallopian tubes in an inverted womb. The rational symptoms are the same in both diseases. The diagnosis of a *periuterinal fibroid tumor* is generally no difficult task, though tumors of the ovaries may be mistaken for them.

These short selections from the original work, will enable our readers to form an idea of its value. In our own opinion, it is a very good manual for the student and beginning practitioner, and the author has achieved the difficult task of saying much in a few words.

E. NOEGGERATH.

ART. XI.—*A Collection of Remarkable Cases in Surgery.* By PAUL F. EVE, M.D., Professor of Surgery in the Medical Department of the University of Nashville. Philadelphia: J. B. Lippincott & Co., 1857, 8vo. pp. 858.

DR. EVE has not, we believe, over-estimated the value of a collection of well authenticated and fully reported cases in surgery, belonging to that class called *rare.* We could wish they were all collected and properly arranged, in a convenient form for reference; and he who should achieve such a task would be entitled to the gratitude of every student and practitioner of surgery.

But such a work, to meet our purpose, would not be a museum of monstrosities, collected merely to amuse the curious, nor yet an *omnium gatherum* of simply extraordinary cases without scientific interest. Such a collection, it is true, could not fail to amuse us in our leisure hours, and, in a certain sense, might prove instructive. But it would not meet the just expectations of any practical surgeon, who thus reasoned with himself: "*If the whole of our art is in observation, and medicine is only enriched by facts,* then surely a collection of the most remarkable must prove of essential service to its cultivators, not only in lightening their labors, but in aiding them in establishing the principles of the science." On the contrary, he would anticipate that not only should the cases be appropriately arranged under given heads (a minor consideration, comparatively), but that they should be selected with especial reference to their adaptation to the illustration of important points in practical surgery.

Although such a work would require none of the scholarship necessary to authorship, yet, as a mere compilation, the editor would need certain qualifications to perform his task acceptably. He should be a man of experience, of sound judgment, of extensive reading, and having *unlimited* means of reference.

If he were not qualified by practical experience, or by the possession of a discreet mind, his cases might be selected with little reference to their appropriateness in illustrating doubtful points, or in aiding the practitioner in the treatment of obscure and perplexing diseases. For it is in this precise particular, as already remarked, that a collection of rare cases can have a practical value. If not thoroughly familiar, also, with the literature of his profession, and if his resources for reference were inadequate, the work would lack the necessary completeness in the selection and detail of cases.

The work is divided into ten chapters; nine of which have the following heads, respectively: I. Head; II. The Spinal Column; III. The Face; IV. The Neck; V. The Chest; VI. The Abdomen; VII. The Pelvis; VIII. The Genito-Urinary Organs; IX. The Extremities. The tenth chapter contains miscellaneous cases. Each chapter is subdivided into sections. This arrangement of cases is according to the different regions of the body, and is natural and convenient.

Although we approve the design of this work, and cannot sufficiently commend the compiler's good intentions, we are constrained to offer the following points of criticism:

1. The most superficial examination of its contents will convince the reader that Dr. Eve's literary resources were not sufficient for the proper accomplishment of the task upon which he had entered. The cases are far too seldom copied from the original publication, to give them a positive value to a writer who may consult his volume as a work of reference. Whoever has noticed the errors which creep into articles as they go the round of medical periodicals, will be loth to refer to other than original authority. The very first case in the book illustrates our remark. The editor falls into the unfortunate error of pronouncing the case anonymous, and deprecates such communications, when, in fact, it was published under the name of the venerable Dr. Stephen W. Williams, as Dr. Eve could have learned by referring to the Journal (*N. J. Med. Reporter*), in which it first appeared. It is true that continental periodicals could be consulted only to a limited extent, without great pains-taking, but there seems no excuse for the failure to examine our own and British journals. There are libraries now in this country, both public and private, which contain, with but few exceptions, the entire periodical medical literature of the English language.

2. Dr. Eve states, in his preface, that, as uncommon events and strange circumstances can best be described by those who have observed them, the language of the writer has generally been adopted, yet he acknowledges to have occasionally taken the liberty of abbreviating articles, and of adding a few brief comments. This is all very well, provided the reader is allowed to distinguish between editor and author. But, on referring to the subsequent pages, such distinction does not clearly appear. We regard this as a great error, and one which materially lessens the value of the work as a source of reference.

3. In the selection of cases, far too little regard seems to have been had to the practical value of the work. The editor would seem to have

first collected his materials, and then have arranged them, so far as possible, under appropriate heads. It occurs to us that the importance of the collection would have been materially enhanced, had the range of subjects for illustration by remarkable cases been greater, and the number of cases under each head been less. For example, section first: *Injury of the scalp.*—Four cases are given under this head, and they are all cases of *scalping.* They teach this single practical lesson, viz. that wounds of the scalp, however extensive, oftentimes readily heal, either by reunion, or the reproduction of tissue. A single case or two, at most, would have established these facts, and left space for the compiler to add cases illustrative of other injuries or diseases of the scalp. Nor would these latter cases, if properly selected, have been less remarkable than those given, if, indeed, it were essential to the character of the work that they be novel.

We must object, also, to the latitude which Professor Eve gives to the term "remarkable." Cases are occasionally introduced which are not at all "remarkable" in surgical practice, but which seem to have been selected simply for some trivial, unimportant circumstance connected with them. For example, on page 41, the case of the Duke of Orleans, *Most extensive fracture of the cranium,* is commenced, and occupies three pages. The duke was thrown from his carriage, striking upon his head, and was carried into a neighboring grocer's shop. As the injuries he received were no more severe than are seen daily in our large hospitals, we can discover nothing "remarkable" in the case, unless it be this fact, which, though "remarkable," scarcely entitles it to a place in this record: "Never was there a more impressive scene. In a poor back-room of a small grocer's shop, were to be seen the king and queen, the princes and princesses, of France, with the ministers of state and of religion, all kneeling around the humble bed on which lay the corpse of him who was the heir to the throne, while the clergymen repeated the prayers for the dead."

The publishers have done ample justice to the typography and binding of this volume, which are all that could be desired.

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PART THIRD.

MEDICAL RETROSPECT.

Report on the recent Advances of the Medical Sciences in France; prepared for the New York Journal of Medicine. By E. Brown-Séquard, M.D., Professor in the Cooper Institute, New York.

I. Physiology.—1. Professor Bernard published some time ago a paper, in which he tried to prove that sulphuretted hydrogen when inhaled is a most active poison; while, on the contrary, when it is introduced in the intestinal canal, it does not produce the least ill effect. It is then absorbed, according to this able experimenter, and when it arrives with the blood in the lungs, it goes out with carbonic acid. An Italian physiologist, M. Paolini, states that sulphuretted hydrogen does not entirely pass away from the blood in this last case, as Bernard thinks. The fact that mineral waters containing this gas have a therapeutical influence, seems to show that it is brought by the blood farther than the lungs. Besides, M. Paolini affirms that he has found sulphuretted hydrogen on the skin of a person who had drunk mineral waters containing this substance. But other facts are necessary to decide the question of the elimination of this gas by the skin, as in this case the patient had taken baths in the same mineral waters.

2. I have presented a new paper to the Academy of Sciences, on the importance of the functions of the supra-renal capsules (see *Comptes Rendus*, 21st Dec., 1857, p. 1036). I try to prove: 1st, that if certain animals (the cat) can live some time after the extirpation of the two capsules, there is no instance on record of a greater duration of life than two months or a little more; 2d, that albinos (rats) can live longer, but that this very fact has a great value for the views I have proposed on the causes of death when the capsules are missing, as these animals have no pigment; 3d, that even cats, albino-rats, die in a few days when the extirpation is made on the same day; 4th, that in rabbits, dogs, and cats, the simultaneous extirpation of the two capsules is followed by death much quicker than the extirpation of the two kidneys; 5th, that death comes so soon in most of the cases of extirpation of the two capsules, that peritonitis and inflammations of some of the viscera of the abdomen have not time enough to be sufficiently developed to kill; 6th, that the symptoms are not those of an inflammation, and that they exist not only in cases of extirpation of the capsules, but also in cases of a peculiar disease extremely common among rabbits in Paris, and in which the capsules are found altered, congested, and brown instead of yellow.

3. Professor Bernard has discovered recently that the blood coming from the sub-maxillary glands is as red almost as the arterial blood, when these glands are active, *i. e.*, secreting much, as when sapid food or vinegar is put on the tongue or galvanism applied to the nerves going to these glands, while the venous blood of these organs is black when they are at rest.

II. PRACTICE OF MEDICINE.—1. A case of chronic glanders, treated successfully by Dr. H. Bourdon, has been reported by him (*Bulletin de l'Acad. de Médecine*, 8th Dec., 1857). The conclusions of the author are : 1st, we should not lose all hope of cure in chronic glanders, even when it is farcinous ; 2d, the means of treatment which seem to be most favorable are the preparations of iodine, and particularly the iodine of sulphur and sulphurous baths, united with tonics and active ventilation of the sick room ; 3d, very early opening of the abscesses seem to prevent their ulcerative degeneration.

2. A remarkable paper on paralysis due to arsenic, has been lately published by M. Imbert Gourbeyre, in the *Gazette Médicale de Paris*, Janvier, 1858. The existence of this kind of paralysis had been doubted by Tanquerel, who was inclined to consider lead as the only metal that may produce paralysis. M. Imbert Gourbeyre says, it would be easy to show that mercury, antimony, zinc, bismuth, and even tin, have produced paralysis. Hahnemann, in the last century, had already quoted more than ten authors who had seen paralysis from arsenic poisoning. M. Imbert Gourbeyre states that not only does arsenic produce paralysis, but, like mercury and lead, it causes trembling, pains in the limbs, contractions, and even convulsions. He relates more than thirty cases, proving that poisoning by arsenic may cause a paralysis of movement or of sensibility in the upper, or the limbs, on one side or on both.

3. Several medical journals have spoken of a mode of treatment recently proposed by M. Renouard, against typhoid fever. In the beginning of the disease, when it is not yet well characterized, expectation is the method followed by this physician. Hardly does he employ then a slight purgation. When there is no doubt as regards the existence of typhoid fever, whatever be its form, M. Renouard has recourse to the following medication for an adult subject :

Potion :	Distilled water . .	100 grammes (3½℥)
	Emetia	15 or 20 centigr. (3 or 4 grs.)
	Diacode syrup . .	25 grammes (6ʒ)
	Water of orange flowers	5 grammes (4℈)

A tablespoonful to be taken every hour. Every other kind of drink must be avoided for four or five hours, so as to avoid vomiting.

When the patient does not vomit, or is not purged by this potion, or when the two effects are but slight, the effect is favorable. But if these effects are considerable, the use of the potion must be stopped, and a tablespoonful only every three or four hours should be taken.

The next day, or two days, after this potion has been taken, another and similar one must be taken. Rarely is it necessary to have recourse to a third potion.

Cephalalgia is the symptom which disappears first, and M. Renouard affirms that it has always ceased after the first potion. Before fever ceases this physician orders some chicken or even beef broth.

Out of thirty-six cases treated as above, there have been only two deaths. Of course, we cannot draw any positive conclusion from this result, but it certainly deserves the attention of practitioners, as M. Renouard is a respectable and learned man.

4. A very interesting paper has been read by M. Briquet, at the *Académie de Médecine.* Its object is the seat of the pain in lead-colic. This able physician declares in forty-four cases he has observed almost always what we will expose. Most of the pathologists place in the bowels the cause of pain in lead colic. However, Laënnec and Barbier thought the disease was in the spinal cord; and Andral and Grisolle admitted that it was a neuralgia. Giacomini affirms that the pain is not in the bowels, but in the muscles of the abdomen.

It results from the researches of M. Briquet, that this last opinion is the right one: he says, he has ascertained that the seat of the pain is in one or many of the muscles of the abdomen, and particularly near their insertions on the pubis, the ribs, or the spine. Sometimes the skin, above the painful part of a muscle, is hyperæsthetic; at other times it is anæsthetic. A mode of treatment, quite successful, although unexplained by M. Briquet, consists in the application of a galvanic current to the painful muscle: a single application is usually sufficient. I can add my testimony to that of M. Briquet; at least, I have seen the pain, which was excessive, disappear completely after ten minutes, under the influence of an electro-magnetic current. My friend, M. Bonnefin has seen many such cases. We will remark, in addition, that after the pain has disappeared it is easier to cure the constipation, which, with the pain, constitute the lead-colic.

5. *Treatment of intermittent fever.*—There is a means of treatment of fever and ague, which is by far too neglected. It consists in applications of the cold shower-bath a little before fever sets in. Although we do not admit, as it might be concluded from a paper of M. L. Fleury, that every case will be cured by this mode of treatment, we think that the facts mentioned by this able physician are worthy of attention. He states that he has treated, during the last ten years, one hundred and fourteen patients, and that they all have been cured, *only* by cold shower baths, and that there has not been a single return of the disease. Forty-three were recent cases, having existed from two days to three months; seventy-one were old and rebellious cases. In all these last cases there was an enlargement of the spleen, or of the liver, or of both; there was anæmia or even a cachectic state.

One single shower-bath has often been enough to effect the cure. It has never been necessary to give more than five shower-baths. Not only is periodical fever cured by this means, but all kinds of periodical affections may also be cured in the same way.

When the periodical attacks are stopped, there are irregular ones, in most of the cases, as long as the engaged viscera have not been brought down to their normal volume. In these cases local *douches* have been applied twice a day, on the hepatic or splenic regions.—*Comptes Rendus de l'Acad. des Sciences*, 30th Nov. 1857.

We may add, that lately, a French military physician, who has had to treat a good many patients attacked with the severe Algerine intermittent fever, has spoken of tannate of iron as almost as good a remedy as sulphate of quinine.

6. *New researches on the general paralysis of the insane.*—This affection, which has been, for the first time, well described by some French physicians, among whom particularly Bayle and Calmeil, has lately been the object of a very remarkable inaugural dissertation by M. Linas. One of the principal questions examined by this young physician, concerns the nature of this disease. Is it the effect of an inflammation of the encephalon or of its membranes, as Bayle, Delaye, Calmeil, Pârchappe and others admitted, or is it a purely *nervous* affection of the brain, as Lélut and others have maintained?

Already Bayle had opened one hundred corpses of paralytic insane, and Calmeil forty-seven. They had found the meninges of the convexity of the cerebral lobes opaque, injected, hardened, infiltrated with serosity, and offering frequently granulations or false membranes. M. Linas has opened one hundred and fourteen bodies of paralytic insane. In twelve cases he has found the pia-mater excessively injected. The cerebral substance was quite full of blood, the grey matter being from an intense red to a dark violet. In twenty-eight cases, besides the preceding alterations, there were adhesions between the convolutions and the meninges. In seventy-four cases, the meninges were infiltrated, opaque, and as tough as a fibrous membrane; the cortical substance of the brain, sometimes violet, sometimes yellowish, according to the degree of the paralysis, always softened, less thick than in normal brains; the white substance injected, and sometimes infiltrated; the convolutions meagre, and the whole mass of the brain more or less atrophied.

In thirteen cases, besides the preceding alterations, there was one or many small circumscribed places where the encephalitis had been more violent than elsewhere. In eight cases there were also effusions of blood.

From these facts, it results positively that the paralysis of the insane depends upon a chronic inflammation of the brain and its meninges. Whether the disease begins in the membranes, as Bayle had said, or in the brain itself, as M. Calmeil maintains, is a question of comparatively little importance. The great point is, that the brain is always inflamed. M. Calmeil has ascertained with the microscope, that in doubtful cases, when the brain did not seem to be much altered with the naked eye, there were, nevertheless, all the microscopical appearances of inflammation.

M. Linas relates cases to prove, that an acute encephalitis may cause the paralysis of the insane.

As regards the first symptoms of this affection, M. Linas declares, that sometimes intellectual disorders first appear, and in other cases, muscular paralysis and insanity appear at the same time. It has been said that there was always what is called by the French, ambitious delirium. But Parchappe, Trélat, Lasègue, have shown that there are exceptions to this rule, and that, therefore, there is nothing specific or essential in this symptom. M. Linas goes farther, and he calls this opinion a paradox. According to him, the delirium of paralytic insane has sometimes the monomaniac form, sometimes the hypomaniac, and in other cases the maniac ; but he acknowledges that ambitious ideas are extremely common.

III. Surgery.—1. A very interesting case of extirpation of a tumor has been communicated to the *Académie de Médecine*, by M. François (*Gazette des Hôpitaux*, 1857, p. 582). About three years ago a young man, now sixteen years old, felt some difficulty in breathing through the left nostril. Eight months ago he consulted M. François, who found a tumor in the anterior part of the left nasal cavity. There was no pain, and the tumor, of a whitish rose color, bled as soon as touched. A few months after the patient came again to consult M. F., he complained of frequent hemorrhages from the nose. The tumor had increased. A ligature was placed round the protruding part of the tumor, but when this part fell off, it was found that a great deal of the tumor remained. From the 1st of May till the 24th of September, frequent and considerable losses of blood took place, and the life of the patient seemed to be in danger. The volume of the tumor become considerable, it protruded outside of the nostril ; the left cheek was enlarged; the internal wall of the maxillary-sinus seemed to be healthy ; there was no ex-ophthalmia, and the eye had no alteration of function. In the posterior opening of the nasal cavity, there were two prolongations of the tumor. Every touch on these prolongations caused a profuse bleeding. It was decided to take away a part of the maxillary bone, so as to be able to reach the limits of the tumor.

A curved incision was made on the skin from the left temporal region towards the left commissure of the lips; the flap thus formed was raised, and dissected along the bone until the orbit, and the maxillary bone were entirely laid bare. The saw-chain was then passed in the spheno-maxillary fissure, and by it the upper maxillary bone was divided from behind forwards. The hammer and the chisel did the rest of the work. As it was impossible to pass an instrument between the tumor and the floor of the nasal cavity, and as the operator was afraid of a hemorrhage from the tumor, he cut the palatine apophysis with Liston's scissors, and divided the veil of the palate in all its length. The bone being so isolated, came away by simple traction. It was then found that the tumor had no adherence with the maxillary bone. To avoid hemorrhage, the fingers were passed between the tumor and the superior part of the nasal cavity, and the tumor was extirpated without difficulty. The internal maxillary artery was injured, but tied at once.

In a few days there was almost a complete reunion of the wound, and the patient was well. But saliva came out by a part of the wound which had not healed, and it was only after five or six cauterizations that a complete cure was obtained.

2. *Adenoid tumors.*—M. Goyraud has sent to the *Société de*

Chirurgie the report of a case of tumor of the breast, which, according to his examination, proves that Sebert, and many other surgeons are right against Velpeau, in admitting that adenoid tumors may be a simple hypertrophy of the lobules of the mammary gland. M. Goyraud insists also on the possibility of finding adenoid tumors encysted.

3. *Frequency and facility of fracture of the thigh in paraplegia.*—Laney has mentiond three cases observed by himself, in a short time, and in which the thigh bone has been fractured, by a muscular contraction, in paraplegic patients.—*Société de Chirurgie, Gaz. des Hôpitaux,* 1857, p. 596.

4. *Treatment of considerable suppurations.*—Prof. J. Cloquet has presented to the *Académie des Sciences,* a paper of M. Ozanam on this subject. The author related several cases to prove that the most extensive suppurations may be cured, in a few weeks, by the internal use of of an infusion of from a drachm to an ounce of *camomile* (anthemis nobilis), in a day. Besides, local applications of the same infusion may prove useful.—*Comptes Rendus,* Dec. 1877.

5. *Tracheotomy in croup.*—A new paper on this subject has been published by Chassaignac (*Gaz. Médic.* 1857, p. 767). He relates a case, and then goes on to show that the reasons for which the operation is not more frequently made are. 1. A doubt as to the chances of success. Many physicians think that the cure might have been obtained without the operation in many cases of success. Chassaignac tries to show how erroneous this view is. 2. The defective manner in which the operation is frequently performed. 3. The delay of the operation. 4. The insufficiency, of medical care after the operation. 5. The numerous causes of death which exist after the operation. Chassaignac tries to prove that death may be due. 1. To the stupor and debility succeeding to the operation ; this cause of death may be avoided. 2. By a hemorrhage, sufficient quickly to kill a child in a state of cyanosis; this takes place particularly when the incision is too long. 3. By progressive asphyxia due to the small size of the canule or its obstruction. 4. To the getting out of the tube and to the asphyxia which takes place before it is replaced. 5. To the lobular pneumonia, which is frequent only because the operation is too much delayed. 6. To the asphyxia due to the penetration of the blood into the bronchi. This takes place particularly when the incision is too large. However, when there is asphyxia due to the presence of blood, then it is necessary to open widely. 7. To the purulent infection. 8. To the diphthiritis of the wound of the operation. This is also a consequence only of a too large incision. 6. To the gangrenous eschares and to the suppurative denudation of the tracheal cartilages.

M. Chassaignac has forgotten a cause of death which has been pointed out by some surgeons, and which my experiments on animals confirm: it is the inspiration of *ocld air.*

6. *Elephantiasis Araborum.*—This affection, so common in warm climates, has been carefully studied by M. Mazaé Azéma, of the Isle of Reunion (*Gaz. Médic.* Nos. 2 and 3, 1858). The descriptions of

this able physician are perfectly exact, and they agree completely with the numerous facts that we have observed in an island of the neighborhood of the Reunion. We think that the following conclusions arrived at, by M. Azéma, are quite right : 1. The *elephantiasis Araborum* is a disease of the lymphatic system. 2. It consists in *frequently* repeated inflammations of the lymphatic vessels and their glands. 3. The inflammation begins in the lymph vessels and then extends to the ganglions; the extravasation of lymph in the neighboring tissues is the consequence of the successive inflammations. 4. The causes of this affection are the influence of the climate.

7. *Morbid relations between the testicle and the throat.*—M. Verneuil relates two cases to show the existence of these relations. In two boys who had an inflammation of the throat, there had been suddenly an effusion of liquid in the *tunica vaginalis*, and in one of them the testicle has become atrophied.—*Archives de Médec.* Oct. 1857.

8. *Polypi of the rectum.*—An interesting inaugural dissertation has been presented to the Paris Faculty, by M. Mercier, on this subject (29th Dec. 1857). It gives a complete history of the disease, according to the notions of the French surgeons. We will leave aside all that relates to the pathological anatomy, symptoms, diagnosis, etc., and only examine what concerns the treatment. As regards the adults, M. Mercier states that the treatment must be chirurgical, although M. Ploviez has seen a case of expulsion of a polypus after a medicine had been taken. Five methods have been proposed : 1. Cauterisation. 2. Ligature. 3. Excision. 4. Ligature and excision. 5. Application of Chassaignac's *écraseur.*

a. Cauterization.—It may be made with caustics or the actual cautery. Loeffer has cured a patient by employing caustics after having been obliged to give up the ligature. But cauterization is rarely employed, because it is difficult (says the author), to limit the application to the pedicle of the polypus. Amussat overcame the difficulty by making use of a kind of forceps, the two branches of which had a gutter on their inside faces. Caustics were put in the gutters and the pedicle was at the same time crushed and cauterized. One single application was sufficient when the pedicle was not too large. The author does not speak of the application of heat by means of galvanism. Dr. Midledorff, of Breslau, has treated, successfully several cases, by this mode of cauterisation.

b. Ligature.—This has often been employed with success, but is sometimes extremly painful, and several times it has been necessary to take it away on account of the excess of pain. To prevent the falling off of the ligature, it is well to place a second upon the first. Roux and Chassaignac have made use of partial ligatures; they pass two threads through the pedicle, and then tie the threads one on one side and the other on the other side.

c. Excision.—When the polypus is not too vascular, excision is the best mode of treatment. This may be done with the knife or scissors. But in some cases there has been a very dangerous hemorrhage. M. Serves and M. Manec have seen such cases. Jobert and Nélaton have employed excision in cases in which the pedicle was extremely vascular; but both of them operated very slowly, cutting layer after layer, and at every time they had divided a large blood vessel they tied it. They succeeded in avoiding hemorrhage.

d. Ligature and éxcision.—The ligature, of course, is first applied and then the excision is made, but the ligature sometimes slips and there is the same danger of hemorrhage as after excision alone.

e. Linear écrasement—Chassaignac has seen the extirpation of a polypus with his instrument, the *écraseur*, without the loss of a drop of blood. Although this method may be very good, Broca has seen hemorrhage after its application.

In children, excision is the best means, because there is much less danger of hemorrhage. M. Bourgeois makes use of nails to cut the pedicle. If there is a notable loss of blood, ice usually will stop it; if it does not, charpie with perchloride of iron will succeed in most of the cases.

IV. Forensic Medicine.—M. Collongues, in a note presented to the *Académie des Sciences* (*Comptes Rendus*, 21st Dec., 1857, p. 1048), points out the usefulness of knowing whether there is a peculiar sound or not to be found if death exists. He has already announced that during life there is in all the parts of the body a peculiar sound, which may be heard easily by the application of the ear, or with the help of a very small stethoscope. This sound disappears after death, but not immediately. It may last five, ten, and even fifteen hours after the last beating of the heart. It disappears gradually, and according to the author, its complete absence from all the superficial parts of the body, is a positive sign of death. In an amputated limb it persists a few minutes.

V. Chemistry applied to Diagnosis.—Becquerel has presented a paper to the *Acad. des Sciences*, concerning the question of the presence of albumen in normal urine. Our readers may remember that, in our preceding letter (see the January number of this journal) we spoke of the singular assertions of M. Gigon, who thought he had discovered albumen in normal urine, and that chloroform could precipitate $\frac{1}{1000}$ of this principle in urine. We, then, said, that if this were true, it was strange that inhaled chloroform did not coagulate the albumen of the blood.

Becquerel and Barreswil have tried to find out if chloroform can be a test for albumen. Their conclusions are :

1st, That chloroform in a small quantity, and agitated with several liquids, gives an emulsion of a characteristic white, resembling coagulated albumen.

2d, The liquids which give this emulsion are a mixture of water with either albumen, or Arabic gum, gelatin, starch, mucus, and, probably, the organic substance still undetermined which exists in urine.

3d, All the varieties of wine not containing albumen, with very few exceptions, give a somewhat abundant emulsion when agitated with chloroform. These emulsions are due to the mucus and the organic substances in solution in urine.

4th, The normal urine that gives with chloroform an emulsion, does not furnish the least sign of the presence of albumen with the most sensitive reagents. Two of these, which are able to detect the presence of $\frac{1}{20,000}$ of albumen, viz.: a recent mixture of acetic acid and a concentrated solution of the yellow prussiate of potash, and the pyrophoric acid, have never shown the least appearance of albumen in healthy urine.

5th, Albuminous urine gives a precipitate with chloroform, but a notable part of the albumen remains in solution, so that chloroform is an unfaithful test for albumen.

VI. Transfusion of Blood.—I have communicated several papers on this subject to the *Académie des Sciences* (see *Comptes Rendus*, 30th Nov. 1857, p. 925), to the *Société de Biologie*, and to the *Cercle des Sciences.* It is known that Blundell had found that a dog, bled almost to death, can recover, even if blood of a mammal of another species, be transfused into its veins; but that after a few days death always comes; while the blood of another dog being employed for the transfusion, may reproduce a lasting life.

Messrs. Prevost and Dumas declare also that mammals cannot be recalled permanently to life after a great loss of blood, if transfusion be made with blood of mammals of a species different from theirs. They state also, that the blood of animals transfused in the veins of birds, and *vice versâ*, produces almost immediate death, after having caused violent convulsions. M. Rayer affirms, also, that the blood of man kills rabbits, after having produced convulsions. Dieffenbach has sometimes seen animals recover after transfusion of blood of animals of other species, but never when they were in a state of apparent death after a considerable loss of blood. Bischoff also has never succeeded in restoring to life mammals that had lost a great deal of blood, in transfusing blood of birds in their veins.

An important fact, found by Bischoff, should, however, have opened the way to more successful results in transfusion. He ascertained that the blood of mammals can be injected in the veins of birds, without killing them, while the venous blood causes rapid death. I have found that venous and arterial blood do not differ one from the other, except on account of the different quantities of carbonic acid and oxygen they contain. Both may kill, if they are rich in carbonic acid; both may not have any injurious influence if they contain a great quantity of oxygen. Numerous experiments have led me to the following conclusions:

1st, That arterial or venous blood from an animal of any one of the four classes of vertebrata, containing oxygen in a sufficient quantity to be scarlet, may be injected, without danger, into the veins of a vertebrated animal of any one of the four classes, provided that the amount of injected blood be not too considerable.

2d, That arterial and venous blood of any vertebrated animal, being sufficiently rich in carbonic acid to be almost black, cannot be injected into the veins of a warm-blooded animal, without producing phenomena of asphyxia, and most frequently death, after violent convulsions, provided that the quantity of injected blood be not below one-five hundredth of the weight of the animal, and also that the injection be not made too slowly.

The reasons for which Blundell, Bischoff, and others have failed to restore a lasting life after the transfusion of blood of an animal of a species different from that of the transfused one, are: 1st, That the blood employed was not fresh; 2d, that it was in too large a quantity; 3d, that it was injected too quickly; 4th, that it was too rich in carbonic acid, and too poor in oxygen. The greatest causes of failure were this last one, and after it the quantity of blood.

From my experiments I have arrived at the conclusion, that there is no danger in employing the blood of dogs, cats, or other mammals in transfusion in man. Besides, I have ascertained, after Dieffenbach and others, that defibrinated blood is as good as blood containing fibrin. As regards the quantity of blood, I think that four or five ounces would be as much as can be needed for an adult man or woman. It is not necessary to warm the blood, but it may be useful to do it in some cases. The blood to be transfused, either that of man or of a mammal, should be received in a large open vase, and whipped at once, then passed through a thick cloth. If it is not injected at once, it must be either whipped again, or, at least, agitated, to be charged with oxygen just before transfusion, which can be performed with any kind of syringe. The injection must be extremely slow, and if after the injection of two or three ounces, there is a great increase in the respiratory movements, it is well to stop for ten or fifteen minutes before finishing the transfusion.

PARIS, *February*, 1858.

INFANTILE PATHOLOGY AND THERAPEUTICS.

Report on the Progress of Infantile Pathology and Therapeutics; prepared for the NEW YORK JOURNAL OF MEDICINE. By A. JACOBI, M.D., Physician to the Children's Department of the (Canal street) German Dispensary of the City of New York.

I.—GENERAL DISEASES.

1. *Extractum fellis bovini* against anæmia Prof. Mauthner has long since recommended the extractum fellis bovini against anæmia in children. He is of the opinion that this remedy operates by being easily resorbed and readily assimilated to the normal blood. Besides, he never found it in the stomach of children, after they had taken it up to the last days of life, and as to its digestibility the experiments made on animals by him and Prof. Ragsky proved satisfactory.—*Journal für Kinderkrankheiten*, 1857, Sept. and Oct. p. 248.

II.—DISEASES OF THE DIGESTIVE ORGANS.

1. *Diphtherite, or malignant sore-throat.*—Benjamin Godfrey reports four cases of this disease, and believes the order, in which its symptoms generally occur, to be this: Shivering; intense depression; dryness and

tingling of the throat, nares and ears; external swelling of the glands; a whitish spot on the mucous membrane of the tonsil, gradual deepening in color as the disease progresses; dysphagia and dyspnœa; dilated pupil; impending asphyxia, and death. The disease appears to Dr. Godfrey to be confined to the mucous membrane, neither touching the muscular nor glandular structure. The glandular enlargement is due to sympathetic irritation. Its diagnostic difference from scarlet fever consists in, 1. The absence of all fever, 2. Absence of all rash, 3. Papillæ of the tongue not enlarged, 4. No desquamation of the cuticle after the disease passes off. In cynanche tonsillaris the abcess forms within the tonsil, and bursts its way out, but in diphtherite, the morbid change commences on the surface of the mucous membrane, and is confined solely to that covering. The extreme and rapid depression is only equalled by the depression of malignant scarlet-fever, or the collapse of Asiatic Cholera. Each patient that died appeared to sink from exhaustion and partial asphyxia. The main point in the treatment is to support the patient's powers, by stimulants and tonics ; and to check the inroad of the disease by the application of the strong mineral acids. Tracheotomy is unsafe, because the depression of the patient's powers is far greater than the dyspnœa, and the depression, while appearing before the dyspnœa, cannot result from the blood being improperly aërated. Dilatation of the pupils existed as a marked symptom in every case. Dr. Godfrey believes the tincture of sesquichloride of iron the best remedy.—*London Lancet, Amer. ed.* Jan. p. 50.

2. *Death from over-feeding.*—A female child, æt. 3 months, who had been unwell for several days, died pretty suddenly. It was ascertained that, in addition to the breast-milk, three cups of arrow-root and some milk and water had been given to the child, and death was attributed to the fact of the stomach being unable to relieve itself of the mass.—*Verdict: "Died from natural causes."—London Lancet, Amer. ed.* Jan. p. 102.

3. *Case of congenital hypertrophy of the tongue, and amputation.*—This case was reported by Dr. Morrogh, of New Brunswick, N. J., and occurred in a girl, seven years old. At birth the hypertrophy was moderate, but it had increased more or less rapidly till reaching its present dimensions ; the tongue was found protruding two inches outside the jaws. It measured two inches across the teeth, and was of a corresponding thickness. The papillæ of the protruded portion were enlarged, and the mucous membrane was thickened and indurated. On the under surface was a ragged, hard ulcer, produced by the pressure of the teeth. These were pressed forward considerably out of their natural position. The horizontal rami of the inferior maxilla were curved downwards, so that, when the molar teeth came in contact, a space of about one inch remained between the upper and lower incisors. By this the girl was enabled to masticate and swallow without difficulty. After the example of Dr. Harris, of Philadelphia, who, after endeavoring to amputate in a similar case by ligature, in 1829, performed the same operation, in 1835, by a double flap incision, checking the hemorrhage by ligature, Dr. Morrogh operated by removing a V

shaped portion from the anterior middle part of the tongue, and ligating the ranine artery. Although copious hemorrhages followed, the patient went home well, on the sixth day after the operation.—*The Medical and Surgical Reporter*, Jan. 1858.

4. *Imperforate anus and absence of the rectum.*—Dr. G. H. Gay presented a paper on a case of atresia ani to the *Boston Society for Medical Improvement*, in which no autopsy was permitted. As there was meconium evidently mixed with urine, the intestine, whether it was the lower part of the colon or the commencement of the rectum, in all probability terminated at, and communicated with, the upper posterior part of the bladder, and was out of the reach of any operative procedure, which was, however, tried. The child died five days after birth. A highly interesting and useful part of the paper referred to, is a collection of a great number of similar cases, reported by older and contemporary surgeons, under the head of: imperforate anus; imperforate rectum; imperforate anus, with an abnormal opening of the rectum; anus natural, and the rectum with an abnormal opening and rectum; imperforate anus; imperforate anus, with an absence of the rectum; imperforate anus, with an absence of the rectum and colon; abnormal anus. The care with which the paper is written, and the attention given to the subject and its literature, is deserving of the highest praise and the special study of our readers.—*Bost. Med. and Surg. Jour.* 1857. Dec. 17th.

5. *The effects of cathartics in imperforate anus.*—James Jones, of New Orleans, says, that trismus nascentium is so frequent in the South, and reliance on the prophylactic influence of purgation is so universal, that it would be almost useless to repudiate the inevitable and nauseating draughts, in which the first efforts of deglutition are invariably exercised. He reports some unsuccessful cases of imperforate anus, with the object, in the first place, to demonstrate that in obstructions of the bowels from malformations, as from other causes, cathartics are both useless and injurious; and in the second, to establish not only the inadmissibility of all food in similar cases, but this interesting fact also, that, under absolute diet, life may be protracted for a number of days after birth, without the sudden and alarming prostration we are generally led to anticipate. In proof thereof he reports the case of two infants, who were born each with an imperforate anus and to whom no food was given. One of them died on the eighth day, the other one on the thirteenth day, after birth.—*New Orleans Med. and Sur. Jour.* Jan. 1858.

6. *Pepsine.*—After learning the high recommendations bestowed on the pepsine as a stomachic remedy, I have given it a fair trial in several cases, but entirely failed. Professor Mauthner does not seem to have succeeded any better; he confesses that he feels unable to share in the general enthusiasm, for the majority of his little patients suffering from mesaraic atrophy, perished just as well with pepsine as without it; and in no small number of cases he found the medicament unresorbed in the stomach. This is not unnatural, because in the so-called dyspepsia of small children it is, on the average, not the

pepsine that is wanting, but an abnormal state of the resorbing gastric follicles, which causes inanition in spite of any abundance of food. Besides, it is not at all certain, not even probable, that the pepsine of herbivorous animals and of man are of the same chemical composition and physiological effect. At all events the assumption is more than possible, that the pepsine used for medicinal purposes, is heterogeneous to the human digestive organs.—*Journal für Kinderkrankheiten*, 1857, Sept. and Oct., p. 247.

III. RESPIRATORY ORGANS.

1. *Imperfect respiration in an infant—Artificial remedy—Recovery.*—Such is the head of a short article written by Dr. Heard, of Galveston, Texas, in which he reports a very simple case of very simple *atelectasis pulmonum* in a new-born child. On the second day, he "felt satisfied that the lungs were at fault," and therefore he "determined to resort to artificial respiration." After six or seven respirations, he saw entire relief of all the distressing symptoms. Finally the author learns "from Dr. Stokes' work on the Chest, that there are some very sensible remarks by Dr. Joerg on this subject," meaning a book published twenty-three years ago on fœtal lungs in the new-born child.* We venture to say that a chapter on atelectasis pulmonum can be found in any manual on diseases of children, written in the last twenty years.—*New Orleans Med. News and Hosp. Gaz.* January, 1858.

2. *Tuberculosis in a new-born child.*—Oscar Heyfelder, in his book "*On the Infancy of Man*," reports the case of an infant, who having inherited the disease from a consumptive father, was born with general tuberculosis manifestly developed.—*Die Kindheit des Menschen. Ein Beitrag zur Anthropologie und Psychologie.* Erlangen, 1857. p. 34.

3. *Tuberculosis pulmonum in a new-born child.*—In order to show the extreme difficulty of diagnosis in some cases of infantile disease, Prof. Mauthner reports the case of a child who came under his care, when four weeks old, and appeared to suffer, according to the present symptoms, from entero-colitis. There was no cough during life, and the child took the breast greedily until the last. The post-mortem examination gave the following results : both of the pleuræ show groups of miliary tubercles ; both of the lungs are voluminous, emphysematous on their anterior side; on the left, some places with manifest interlobular emphysema. Numberless miliary tubercles are found to be spread through the parenchyma, in the middle and lower lobes several infiltrations, beginning to suppurate in their centres. The bronchial glands, and even a part of the thymus, prove to be tuberculous. Next to the left main branch of the bronchi there are two caverns of tuberculous bronchial glands, opening in the bronchus. The heart is contracted, firm, without contents In the stomach, in which nothing is contained, there are two tuberculous ulcers, and several follicles are found to be infiltrated with tubercles. The mesenteric glands are small, tuberculous; the mucous membrane in the whole colon of a grey color ; the

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* E. Joerg : *Die Fœtuslunge im gebornen Kinde.* Grimma, 1835.

intestinal follicles of a dark color, some of them ulcerated; in the region of the ileo-cœcal valve, the glands of Peyer pale, ulcerated; the intestines generally pale, thin, full of yellow mucous fæces. Reins and bladder are hyperæmic. It is evident in this case that the continual vomiting and diarrhœa, during life, are satisfactorily explained by the abnormal state of the stomach and intestines.—*Journal für Kinderkrankheiten*, 1857, Sept. and Oct., p. 246.

4. *Tuberculosis thymi.*—Dr. Abelin, of Stockholm, publishes the following interesting case: "A child, of three months of age, began to suffer from a dry cough and frequent respirations. After the use of vin. ipec. and emul. tereb., it got better. But four weeks later it began anew to cough; hoarseness, mucous rhonchi, and sharp and loud respiration followed, and dyspnœa increased for the next fortnight; then the child died. Post-mortem examination: some congestion of the brain and its membranes; the thymus is intimately connected with the sternum, and has to be separated by means of the knife; it is extraordinarily large and hard, particularly so the right lobe, which is much swollen, and extends down to the diaphragm. It contains a fluctuating tumor of the size of a walnut, containing a greenish-yellow pus. On the walls of this tumor, tuberculous yellow masses were found, and a tubercle as large as a walnut, besides a smaller one, were found in the same right lobe of the gland. Smaller tubercles were found to be contained in the left lobe. The bronchial glands were infiltrated with tubercles; so were the lungs. In no other organ were tubercles found. In another case no symptoms, while the child was alive, could be perceived, except a hollow cough and sharp respiration; the child died of acute pleuro-pneumonia. Besides the products of the inflammation, tubercles were found in the lungs, and the thymus was large, hard, and considerably infiltrated with a yellow, solid, tuberculous mass.—*Journal für Kinderkrankheiten*, 1857, Sept. and Oct., p. 301.

5. *Pulmonary and bronchial tuberculosis.*—Every physician acquainted with the methods of physical exploration—and we readily believe every one is now-a-days—ought to know, that tuberculosis is not at all uncommon in children. The symptoms are generally known; the prognosis not so unfavorable as in adults. This statement is affirmed by Dr. J. Schwartz, of Berlin, who reports to have repeatedly succeeded, by careful regulations as to their diet, and some well-adapted pharmaceutical remedies, in restoring to health children of from two to five years, who were already considerably emaciated, and subject to hectic fever. Against the attack of hectic fever he warmly recommended, as Skoda did before him, the sulphate of quinine, with small doses of Dover's powder. Besides, he gives cod-liver oil and amara, which he says are too little thought of in our time, and have been too readily forgotten.—*Journal für Kinderkrankheiten*, 1857, Sept. and Oct., p. 258.

6. *Deaths by pneumonia.*—From a very elaborate and useful article, written by W. Ziemssen, on the geographical extension of pneumonia, we take the following:—The percentage of deaths by pneumonia, in

Germany, in proportion to the whole number of deaths in general, amounts in private practice to 8.86; in the hospitals of Berlin, Vienna, Neufchatel, and Paris, to 6.29 ; amongst the whole population of Geneva, to 5.18; in a number of large hospitals where children and persons in old age are not admitted, to 5.40; in the children's hospitals of Stockholm, Vienna and Frankfort, to 10.07.

Trébuchet, of Paris, gives the following ratio of deaths by pneumonia. Of 1,000 persons of each sex, living at the ages denominated below, the following ratio died by pneumonia, at Paris :

Age.	Males.	Females.	Age.	Males.	Females.	Age.	Males.	Females.
0– 4	16.0	13.3	30–40	1.0	1.0	70–80	18.5	16.1
4–10	1.2	1.1	40–50	2.1	1.5	80–90	23.1	31.1
10–20	0.4	1.2	50–60	4.7	2.7	90–100	74.9	66.5
20–30	0.4	0.7	60–70	8.8	8.6			

Monatsblatt für Medicinische Statistik und öffentliche Gesundheitspflege, No. 8, 1857. *Beilage zur deutschen Klinik.*

7. *On Indications and treatment in Croup.*—According to Luszinsky, of Vienna, there are four indications to be followed in croup, which are—1st, to alter the peculiar crasis of the blood. This indication requires antiplastics, of which hepar sulphuris, sulphate of copper, and tartar emetic are either too uncertain, or too dangerous, because repeated vomiting would be injurious by congestion of the brain, and mercury, which readily injures by producing diarrhœa, salivation, and general mercurialism. Better than all of them, are alkalies, which Luszinsky seems to have recommended prior to Lemaire and Marechal, of Paris. The hydrate of potash or soda is most antiplastic, but they are not easily tolerated ; the bicarbonate is the most digestible, but the abundance of carbonic acid in the chemical composition of the bicarbonate of potash or soda diminishes the medicinal effects of the alkalies ; therefore he gives the carbonate of potash or soda, from one half of a drachm to two drachms every day. 2nd—To prevent the localization of the inflammation in the larynx. This indication requires no bleeding, nor leeches, but, in the first stages of the disease, cold applied to the larynx, and large blistering plasters, kept in suppuration for some days. 3rd—To remove the spasm of the larynx by narcotics. 4th—To destroy, or remove the pseudo-membranes, which have been formed. The best caustic in these cases is a solution of from four to eight grains of nitrate of silver in an ounce of water, which is to be applied by a brush. Emetics are necessary, where pseudo-membranes are loose, or beginning to loosen, in the larynx or bronchi.—*Journal für Kinderkrankheiten,* 1857, Sept. and Oct., p. 155.

IV.—CIRCULATORY ORGANS.

1. *Diseases of the heart.*—Diseases of the heart in the first two years of life are usually deemed excessively rare. Amongst the number of cases reported by West, Rilliet and Barthez, Bednar, and many others, there are only a very few, which occurred at this early age. There is no doubt, that the diagnosis of organic alterations of the structure of

the heart in very young children is sometimes exceedingly difficult; for the impatience, troublesomeness, and screaming of the patients, the frequency of the action of the heart, and the small size of the organ, are very important obstacles. Besides, it must be held in view, that many diagnostic signs are not of the same value in very young children, and in adults. Thus West is of the opinion, that some sounds heard in general anæmia, cannot be referred to the same general cause in the infantile organism, but are to be attributed to some pathological alteration in the structure. Furthermore, it is to be borne in mind, that there are many abnormities, which, because they once lead to an early death, are heard only in infancy, and aggravate an exact diagnosis because of their multifarious origin. The largeness of the fœtal apertures, the presence of extensive atelectasis pulmonum, which will stop circulation in the pulmonary arteries, and force the blood into the left heart, anomalies in the origin and course of the great blood-vessels are amongst their number. Even the ictus cordis may be misunderstood, and the results of percussion unavailing, because of local atelectasis, which is also, sometimes, a frequent reason of mistakes in explaining the facts found in post-mortem examinations. Sometimes the heart, after the thorax is opened, is visible in an uncommonly large circumference, whenever the lungs are reduced to a smaller volume, is filled with dark blood, and pericardium and thymus are remarkably cyanotic, not because of a supposed disease of the heart, but for no other reason but atelectasis pulmonum. These facts are collected, in a well-written article, by Carl Gebhardt, and illustrated by a series of cases. Nevertheless, in his opinion, diseases of the heart, in very young children, are not rare at all. There are many instances of slight thickening of the auriculo-ventricular valves, small hemorrhages in the valvular tissue, small red fibrinous depositions on the valves, and extensive genuine degenerations of the heart, with hypertrophy and its consecutive symptoms. They are very frequently found in infants suffering from, and perishing by, constitutional diseases, as rachitis, syphilis, etc.; less so in well developed infants, who died by acute diseases.—*Deutsche Klinik*, 1857, No. 11.

2. *Persistent ductus arteriosus Botalli.*—This abnormity was observed in a child of three months of age. The heart was only about one-third of the size of a healthy heart from a child of the same age. Foramen ovale open ; the ductus arteriosus perfectly pervious, having at its junction with the aorta a diameter of three millimetres.—*London Lancet*, Am. ed., Jan., p. 59.

3. *Congenital nævus on the chest of an infant.*—A large nævus, which occupied the entire left mammary region of a healthy infant, was observed at St. George's Hospital, London. It was about five inches long, transversely, and three and a-half from above downwards, its greatest point of elevation being over half an inch. It was congenital, had not increased much in size, and was thick and rugose in surface. It was treated by passing a number of threads from above downwards, tying their ends so as to completely strangulate portions of it, which was, however, permanently done by passing long pins in its two directions, and winding a ligature around the whole.

Another child had a nævus similarly treated. It was the size of a crown-piece, and was situated on the calf of his left leg.—*London Lancet*, Am. ed., Jan., p. 87.

V.—UROPOIETIC AND SEXUAL ORGANS.

1. *Lithotomy in a rickety child, with rickety pelvis.*—A child of twenty-one months of age had been subject to stone no doubt for some time; possibly it was born with it. Its pelvis was in a deformed state from rickets, with a considerable flattening from before backwards, so that the pubis approached the promontory of the sacrum ; the bladder was thus not only high up, but difficult to reach with the finger. The stone was extracted by Mr. Erichsen, at University College Hospital, London, and was of an oblong figure, nearly an inch in length, and proportionately thick. The case progressed favorably after the operation.—*London Lancet* (Am. ed.,) Jan., p. 87.

2. *Stone in the bladder.*—Two cases of stone in the bladder of female children, each five years and a half old, came under the care of Mr. Hillman in Westminster Hospital, London. In the first case a conical sponge tent was introduced into the whole length of the urethra, and retained for five hours, for the purpose of slowly dilating that canal. Chloroform having been administered, the stone was withdrawn, after an incision had been made in the direction directly upwards towards the symphysis pubis, because of the size of the stone. This was of an ovoid form, measuring fully three inches in its longest, and two inches and three-quarters in its shortest circumference. It consisted of laminated urate of ammonia. Twenty-five days after the operation, the child was discharged, perfectly free from all suffering. In the second case, chloroform having been administered, a small, three-branched urethra-dilator was introduced, and the canal thereby dilated in the course of five minutes sufficiently to allow of the introduction of a pair of slender, straight lithotomy forceps into the bladder. No incision was necessary. The stone was of an ovoid form, thickly studded externally with small, sharp prominences. It measured rather more than two inches in its longest circumference, and nearly one inch and three-quarters in its shortest circumference; it was composed of oxalate of lime. The child was discharged thirty-four days after the operation. *London Lancet*, Am. ed., Jan., p. 70.

3. *Addison's disease in new-born children.*—In a session of the Society for Scientific Medicine at Berlin, R. Virchow gave a critical report, together with some new facts and cases, on Addison's book on the constitutional and local effects of disease of the suprarenal capsules. He added some remarks on a disease described already by Rayer, viz. : apoplectic extravasations in the suprarenal capsules of new-born children, with a dark red color of the skin, and reported a case, observed by himself, of remarkably extensive cyanosis, which was complicated with empyena and apoplexy of the suprarenal capsules.—*Deutsche Klinik*, 1857, No. 45.

VI.—NERVOUS SYSTEM.

1. *Double sub-pericranial Cephalæmatoma.*—A cephalæmatoma on each side of the top of the head came under the observation of Dr.

Gibb, of London. The child had been born after a labor of a quarter of an hour, without assistance of any kind. The swelling on the left side was the largest, and fully the size of a hen's egg. It did not communicate with the other one, and pressure produced no effect on the child, who was in every respect healthy. The tumors were found to be encircled apparently by an osseous ridge, which seemed elevated with the tumor as it were, lying in a sort of depression in the bone. The first was completely absorbed in thirty-nine days, and the second in fifty days.—*London Lancet*, Jan., p. 63.

2. *Hydrocephaloid disease.*—Dr. Ch. W. Graham reports the case of a little girl, two years and a half old. There was no pain on pressure being applied to the region of the stomach and bowels, though there was the most urgent desire for cold water, which was immediately rejected. The skin was cool; the pulse 88, soft, and moderately full; the tongue thickly coated to the point, and red round the edges. The bowels were confined; there was constant picking at the nose and angles of the mouth, and the child awoke suddenly screaming from short sleeps; the countenance was occasionally flushed, the urine high-colored and scanty. There was, on the next day, strabismus, dilatation of the pupils, grinding of the teeth; the pulse was small, and very feeble; the face pale and collapsed. The child had suffered two or three convulsive seizures. In fact, all the usual cerebral symptoms, met with in the two opposite states of overfullness and of deficiency of blood, were found. The treatment consisted of some doses of castor oil, repeated enemata, and the strongest stimulants given in short intervals. The child was entirely well after four days.—*British Medical Journal*, Jan., 9th, 1858. We have seen many cases, in which inanition was the only cause of severe cerebral symptoms; but we do not find, in the history of the case before us, the least proof of its belonging to the kind of cases referred to. Besides, it is well known, that convulsions and other cerebral symptoms are not rare occurrences, from no other cause but continuous obstipation of the bowels, with or without gastric catarrhus, flatulency, etc. For all these cases enemata and purgatives are the best possible remedies, although the consecutive cerebral symptoms appear to be of the extreme severity, and show their wholesome effect in a short time. In the case reported by Dr. Graham, we do not know, indeed, if his diagnosis was the correct one, although he affirms that, by the writings of Abercrombie, Marshall Hall, Gooch, and Evanson and Maunsell, he has learned more about these things than " the general practitioner."

3. *Recovery of a young infant after taking nearly two grains of opium.*—This case occurred in an infant, only six days old, and is reported by Dr. Chamberlain, of Northampton, Mass. When he saw the patient, two hours after the occurrence, the respiratory function was suspended, the face and lips were livid, the pupils contracted to a point, and it was not only perfectly comatose, but in a state of complete asphyxia. Artificial respiration was resorted to for three hours; energetic rubefacients applied to the spine and extremities, dry heat to the rest of the cutaneous surface, volatile ammonia to different portions of the body,

and several enemata of brandy and turpentine given. At the close of the third hour, the respirations were pretty regular and uninterrupted, and repeated about twice per minute. But it was not until ten hours had elapsed after the narcotic had been taken, that anything could be introduced into the child per vias naturales. In twenty-four hours, scarcely a trace of the effects of the poison was observable.—*Bost. Med. and Sur. Jour.* Dec. 3d, 1857.

4. *Treatment of infantile hydrocephalus by elastic pressure.*—Five and thirty years ago it was known to Sir Gilbert Blane, that it was possible to get rid of encephaloid effusion by mechanical pressure, the means employed being bandages and adhesive strapping. Richard Phillips, in two cases he reports, constructed an elastic hoop, or fillet, with strong india-rubber webbing, two inches wide, with which to encircle the head. Having made the fillet purposely too small in the girt, he was enabled, by stretching it with both hands from within, so to adjust it as to exercise a considerable amount of well regulated pressure round the distended cranium. Some days after adjusting the elastic fillet, the bands became lose by the cranial bones having approximated each other. There was also less tension of the scalp. After a short time the fillet had to be readjusted again, until the cranial bones touched each other. A cure was effected in both cases. Naturally, the earliest possible age, and where the case is not of long standing, are the conditions most favorable to remove, by pressure, the atonic, passive condition of the meningeal vessels, resulting from absence of that resisting medium offered by the healthy, normal calvarium. Besides, the elastic fillet seems to be very much preferable to bandages and adhesive plasters, which would need removing in short intervals, as soon as diminution of bulk begins, not to speak of the removal of a number of adhesive straps from the hairy scalp.—*London Lancet, Amer. ed.* Jan. p. 47.

5. *Spina bifida submitted to operation.*—About three years ago, Paget attempted to practice obliteration at the neck of a spina bifida of very large size, by passing around it a ligature; the child died before the ligature had cut its way. Two cases were treated at University College Hospital, by Mr. Queen and Mr. Erichsen, and both ended fatally after the operations. In a fourth, under the care of Mr. Hutchinson, a simple puncture and withdrawal of fluid was followed by fatal arachnitis of the cord, pus having been secreted in the sac. Another child, one month old, and quite free from any cerebral affection, was operated upon by Mr. Borlase Childs, at the Metropolitan Free Hospital; the case has conformed to the general rule as to result; it was operated upon by pushing the internal sac down in the direction of the spine, cutting a part of the skin out and uniting the margin of the wound on hare-lip pins. The child remained very restless and ill after the operation and died on the following morning.—*Med. Times and Gaz.* Nov. 28th, 1857.

6. *The diagnosis of meningitis tuberculosa.*—The cerebral symptoms are frequently not sufficient to make the diagnosis of a cerebral disease certain. Particularly the signs of meningitis tuberculosa are such,

that it would be impossible to make an incontestable diagnosis without further elucidation. The diagnosis is generally, by all good authors, considered as certain, if the cerebral symptoms, which, being known to every physician, we need not repeat here, occur in a child with tubercles in the lungs or of tuberculous parents. In this same review there is a case of tubercles in almost every organ where tubercles ever have been met with (III. 3), in which the state of neither of them was ascertained before death. Thus, it appears, that tuberculosis of the lungs may not be found in children who die from meningeal tubercles. This is what Dr. Schwartz lays stress on, adding however, that all his cases occurred in children, who either were tuberculous themselves, or born of parents, in whose families tuberculosis was hereditary.—*Jour. für Kinderkrankheiten*, Sept. and Oct. 1857, p. 260.

III.—SENSORY ORGANS AND ACUTE EXANTHEMS.

1. *Ophthalmia scrophulosa.*—This very common disease is as frequent as it is obstinate. It is not new, what Dr. Schwartz feels obliged to state, that it cannot well be cured without a general antiscrofulous treatment. But his local treatment is not universally known. He applies, several times a day, some drops of a solution of two grains of nitrate of silver to an ounce of water, or has the eyes bathed, many times through the day, with a fomentation of one grain of nitrate of silver to an ounce of water. The photophobia used to disappear a short time after the application had been regularly made. He did not succeed so well with a weak solution of bichloride of mercury.—*Journal für Kinderkrankheiten*, Sept. and Oct. 1857, p. 261.

2. *Furuncles in young children.*—Furuncles are not rarely found in young children, and are, particularly when in the scalp, exceedingly painful. This disease is, according to the experience Prof. Ebert of Berlin, more generally the consequence of a change having been made in the diet, than of uncleanliness, in an infant. Sometimes it is connected with congenital or hereditary syphilis ; in these cases the little ones are remarkably emaciated, and show, besides, maculæ syphiliticæ. He opens the fully developed furuncles by sufficiently large incisions, puts a plaster of sugar of lead and turpentine on the other ones, orders emollient baths, and sometimes, for anæmic, badly fed infants, prescribes tinct. fer. pom. with tinct. rhei vin.—*Journal für Kinderkrankheiten*, Sept. and Oct. 1857, p. 263.

3. *Treament of erysipelas.*—Abelin gives, in simple erysipelas, from four to six drops, several times a day, of solut. chloret. ferr. spir. æth., and applies externally, tinc. iod. and æth. sulph. In the gangrenous erysipelas he uses bark and applies aromatic infusions or lime-water. *Journal für Kinderkrankheiten*, Sept. and Oct. 1857, p. 299.

4. *Temperature of the skin and blood in scarlet-fever.*—C. Hennig succeeded in proving by experiments, that the temperature of the skin, in children suffering from scarlatina, does not exceed the temperature of their blood.—*Jahrbuch für Kinderheilkunde und Physische Erziehung*, 1857, p. 54.

6. *Temperature of the body after vaccination.*—C. Hennig, of Leipsic,

proved by a series of experiments, that the temperature of the body in general increases in the first days after vaccination has been performed, the elevation amounting, in the average, to 0.425° F. The temperature of the skin, too, is found to increase. The primary elevation of the temperature of the skin must not be attributed to the local process, the vaccinated spot proving to decrease remarkably in temperature during the first three days. After this decrease the normal temperature is recovered on the morning of the fifth day. On the fifth day an elevation is beginning, which is the first sign of inflammation. This change of temperature in the wounded part depends—1st, on the consequences of the injury, which is followed by a reaction, although small, in which exact physiological analysis could not but find the commencement of inflammation. The first stage of the stasis is said to consist in the contracting of the adjoining small arteries. This, and the stagnation of the circulation of the blood in the small veins, would be sufficient to explain the diminution of temperature. 2d. On the introduction of the animal poison. This is to be concluded from the difference being far greater after a successful vaccination, than after one which is not successful. The suppurating fever, after the abnormal diminution on the fourth day, begins on the fifth after vaccination, and ceases on the tenth. On the eleventh, the temperature of the blood sinks again below the physiological medium. After a slight elevation on the twelfth and thirteenth day, there is not even a sign of fever or augmented temperature to be found on the fourteenth. On the same day the inflammation round the single pustules has always entirely disappeared. Vaccine fever reaches its height on the eighth day, next to it on the ninth morning. Temperature in the actual vaccine fever is from 1.35 to 2.5° F. above the physiological rule. It is higher, therefore, than in the suppurating stage of vaccination, but less than in the same stage of variola. Generally, vaccine fever may be compared with variolous fever; this, too, showing three principal elevations; the first during the prodromi (from two to four days); the second during suppuration (from the eighth to the eleventh day); the third going along with desiccation (on the twelfth day). But they differ in the following: Variolous fever usually reaches its maximum in the first, vaccine fever in the second effervescence; except variola confluens, in which the fever reaches its utmost height in the second term of elevation; varioloid fever shows the same peculiarities as variolous fever. The artificial opening of the vaccine pustules does not always effect an increase of the general temperature. Menstruation appears to have no particular influence in increasing the temperature of the blood.

Similar results, as to temperature in variolous fever, are those obtained by Bouillaud, Andral, and Roger.—*Jahrbuch für Kinderheilkunde und physische Erziehung*, 1857, p. 44.

VIII.—MOTORY ORGANS.

1. *Malformed Foot.*—Two bifid toes were exhibited to the Pathological Society of London, which had been removed from a child six years of age. There were seven toes on the foot before amputation; or, counting the two bifid toes as four, there were nine. The supernume-

raries were situated at the inner side of the foot, about the normal position of the great toe.—*London Lancet*, Am. ed., Jan. p. 59.

2. *Congenital absence of the latissimus dorsi.*—This deficiency was observed in a young man. Part of the pectoralis major was also absent; and, as a compensation for both deficiencies, the teres major was considerably hypertrophied. The malformation, though causing a great change in the shape of the shoulder, did not cause much impediment to movement; the incomplete arm was, however, weaker than the other.—*London Lancet*, Am. ed., Jan. p. 59.

3. *Congenital torticollis.*—A mild example of wry-neck has been observed at King's College Hospital, London, in a little girl. The deformity existed at birth, and depended upon contraction of the lower part of the sterno-mastoid muscle, which had become attached to the deep fascia of the neck. A cure has been effected by subcutaneously dividing the muscle. There was not a drop of blood lost.—*London Lancet*, Am. ed. Jan. p. 86.

4. *Malum coxæ senile.*—After a careful review of the writings, on this subject, of B. Bell, R. D. Smith, Adams, Colles, Stromeyer, Chelius, Wernher, Ecker, Redfern and others, Karl Ritter gives an accurate and minute pathologico-anatomical and microscopical description of this disease, which he, following the example of Professor Bruns, of Tübingen, prefers to name "chronic deforming inflammation of the joints." On page 32 of his little work he makes the following remarks: "When this disease was first described in Ireland, it was believed to be peculiar to the hip-joint, and to occur only in old persons. Both of these opinions have been repudiated; so much so, that the really most instructive cases of this disease are met with in younger persons, in whom it has had opportunity to spread for a series of years. I have observed a boy, ten years of age, who suffered a long while from this peculiar inflammation in both of his knee-joints; and young men of twenty years of age, laboring under this same disease for many years past, are frequently met with. Nevertheless, the name, 'Malum coxæ senile,' does not appear to me to be much out of the way; for it is true, that the disease uses to be more frequently found in old persons than in young ones. In the former it is particularly the hip-joint which suffers most frequently; at an earlier age there are more cases, where the other joints are affected."—*Karl Ritter, über die chronisch-deformirende Gelenkentzündung.* Gottingen, 1856. 8, 41.*

IX.—NOTICES OF RECENT WORKS.

1. *Die Kindheit des Menschen. Ein Beitrag zur Anthropologie und Psychologie.* Von Dr. Oscar Heyfelder. Erlangen. 1857.

The Infancy of Man. A Contribution to Anthropology and Psychology. By Oscar Heyfelder, M.D., Lecturer at the University of Munich. Pp. 92.

There are, in the literature of every country, a great many works on the management, physiology, pathology, dietetics of infancy, and infancy in general. But there is none amongst them which contains more genuine truth, more physiological and psychological knowledge and medical experience than the little work we feel bound to recommend to the attention of our readers. To give extracts is scarcely possible; for there is scarcely a page which could be abbreviated without detracting from its value. We very much regret that the majority of our readers are not conversant with the language in which this little work is published. The special subjects treated of are the following: physiological history of infantile life; psychological history of infantile life; hereditariness; influences acting on the fœtus and the suckling; management and education; punishment; punishment by frightening; punishment by confinement; exertion in early age; puberty.

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* Karl Ritter, *on the chronic deforming inflammation of the joints.* Gottingen. 1856.

2. *On the more Important Disorders of Females and Children.* By GEORGE ROBERT ROWE, M.D. etc. London: 1857, 12mo., pp. 124.

THIS little book contains, in a short chapter, some remarks on "mesenteric disease," on scarlet fever, and measles, of which, we are sorry to say, not one will prove satisfactory to the scientific reader. By "mesenteric disease" the author not only means torpid abdominal scrofula, but every inflammatory disease of any of the abdominal organs in a scrofulous child. But his terminology is not the most objectionable feature in the whole; his prognosis, which "must be an unfavorable one," is undoubtedly false, because a regular and wholesome diet, sometimes supported by a slight medical treatment, improves the health considerably. As to food, he recommends white fish, forbids animal food, all stimulants, all vegetables, with the exception of mealy potatoes. We must confess, that we follow quite another rule; we think any kind of fish less digestible than "animal food," *i. e.*, beef, veal, mutton; there is nothing we could recommend more confidently than animal food, in torpid abdominal scrofula, and less, than "mealy potatoes," and potatoes in general. The general scientific stand point of the author is a very simple one. Like Hahnemann, who traced every disease back to "psora," our author derives everything from "mesenteric disease;" he attends to the natural restorative powers of digestion only "by removing all crudities in the alimentary canal," and this "must prove the safest and most permanent mode of restoration to health." And, finally, "the predisposing cause of mesenteric disease is the irregular action of the liver upon the mucous membrane of the bowels." After all, it does not appear extraordinary, that the serious affections consequent on scarlet fever, even dropsy, are nothing else than "mesenteric disease." Thus, pathology has become very simple, indeed, for instead of the former legion of diseases, we have for the future only one, the "*mesenteric disease*," the mother of all the others, and the only one, that requires attention. This affection is cured by rhubarb and carbonate of magnesia. In conclusion, we would inform the author, that the quotation from Liebig (p. 123) asserts in very plain words, just the reverse of what it has been called upon to prove.

3. *Arzneimittellehre in ihrer Anwendung auf die Krankheiten des Kindlichen Alters.* By Dr. Joseph Schneller. Wien: 1857, 8vo., pp. 176.

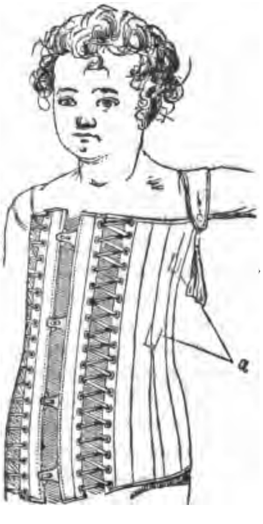
Materia Medica, Applied to the Diseases of the Infantile Age. By Joseph Schneller, M.D. Vienna: 1857, 8vo., pp. 176.

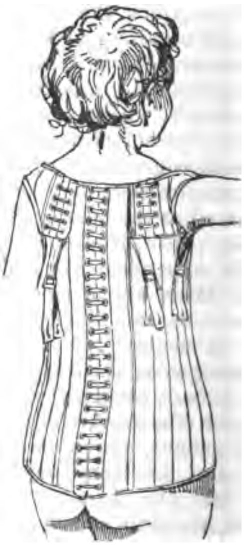
Infantile physiology, pathology, and therapeutics have been acknowledged long ago as separate departments; it is but natural that pharmacology be also, at last, considered under the special view, as to the diseases of children. Although this book has been written in a language, which is not often understood in this country, we cannot but direct the attention of the American profession to its existence, because of the soundness of the general principles, and of the vast amount of special knowledge contained therein. To give many extracts from it in this short review is impossible, because of the great variety of its contents; but we feel bound to repeat, at least, some of the author's general principles on the use of medicaments in infantile diseases. The infantile age is remarkable for the large number of diseases which are prone to disappear of themselves without the help of medicaments; there are a great many others, requiring almost nothing except strict regulations of the diet of the patients. But there is another class, particularly of those diseases, which will show, sometimes, dangerous incidents, sudden alterations, especially in the functions of the nervous system, in which the use of pharmaceutical remedies are found to be positively necessary and useful. Pharmacology and therapeutics cannot be separated from each other, because scientific pharmacology is nothing else than the science of the physiological effects of the single medicaments, whose modifying influences are to be brought to bear upon the pathological alterations of the normal organism or organs. The knowledge, however, of the physiological effect is not sufficient to give a medicament its place; for the effect in curing diseases is to be considered as the main constituent of the definition of what a medicament is. Now, it must be remembered, what has been ascertained by a large experience, viz.: That the effect of medicines is not always alike. There are many diseases, the nature of which is not very well known to us, and which it is as easy, as it is necessary, in the present stage of medical science, to explain by a *genius epidemicus.* This epidemic genius, then, is not only apt to produce, under favorable circumstances, a certain class of diseases, but also to alter and modify the character of a number of other ones; so that, in a time of intermittent fevers, quinine, and in an epidemic of diseases going along with decomposition of the blood, acids, are able to remove diseases which do not show, still, the character of the ones mentioned. Whatever the case may be, the main principle in prescribing medicines ought to be general simplicity; the most appropriate way of using them, with children, is in solution; less so powders, for several reasons, although in many cases this mode of use cannot be avoided. Pills and boli have to be avoided entirely. Sometimes, as is generally known, medicaments destined to work on the system of very young children, have to be taken by the mothers or nurses. As to the doses in which medicines are to be given, the physiological fact is to be recollected, that the irritability is far greater in children than it is in adults. This is to be borne in mind, whenever narcotics, stimulants, and caustic remedies are to be taken ; in all of these cases the doses to be given ought to be proportionately small. Before concluding, we may refer to the highly important fact, that reconvalescence after the majority of diseases occurring in infantile age *does not require to be supported or aided by any pharmaceutical preparations.*

CORRESPONDENCE.

Apparatus for the treatment of curvatures of the spine.—By J. A. WOOD, M.D., of Boston. In the November No. of the *New York Journal of Medicine*, two cases of Pott's disease of the spine were reported as having been successfully treated, not only as to the arrest of the disease, but removal of the curvature; the mechanical part of the treatment consisting in the adjustment, as necessity required, of an apparatus involving a new principle, both in its construction and mode of application.

Since the report of those cases, a drawing of the apparatus has been requested, which I herewith submit.





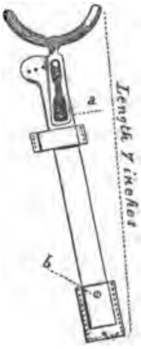
The two leading figures seen in the appended cuts, represent both a posterior and front view of the apparatus when applied to the patient, which extends from a point near the top of the shoulders to the promontory of the sacrum, and from the pubis to the junction of the middle and upper thirds of the sternum, embracing the entire form within those limits. It laces in the centre of the back, and is brought together and secured in front by appropriate fastenings, convenient for its application and removal, and, at a short distance from the centre, on either side, are parallel lacings, extending from above downward the entire length of the front of this apparatus.

Shoulder braces are attached to it by lacing, to which, directly under the arm, and at a point near the junction of the brace with the apparatus buckle-pieces, are appended, which complete the more common arrangement, I use in redressing angular curvature of the spine. The form varies somewhat, however, as all cases of curvature that come under treatment are not alike.

As will be observed by referring to the front view in the drawing, the apparatus curves regularly over and under the abdomen, which is usually both prominent and pendent in these cases, a condition that serves to aggravate the difficulty and greatly augment its force, and embraces the most depending portion.

After the apparatus has been properly adjusted, and all the points and bearings in the case duly considered, the front lacings are then to be tightened, by which any required amount of pressure may be produced; but, the feelings of the patient are *always* to be consulted in the regulation of it, as it is *never* necessary to have it so great as to render him even uncomfortable by it. When properly adjusted to the patient, the effect of the apparatus is to elevate and support the abdominal viscera, which not only relieves the spinal column from a heavy weight dragging from its superior portion, but contributes very much to its restoration to a normal position, by the support it receives from that source.

The crutch is an appendage I *seldom* use, preferring a different mode of support for the spinal column than a direct and upward pressure under the arms, which is not only uncomfortable and, comparatively, inefficient, but gives the patient a very unseemly appearance often, by forcing the shoulders far above their natural position.



Case of asphyxia from inhalation of chloroform—Successful application of the "ready method."—By J. H. Hobart Burge, M.D., Surgeon to Brooklyn Central Dispensary, late surgeon to New York Dispensary, etc.—Being invited by my friend, Nelson S. Drake, M.D., to witness the amputation of a thigh, in the case of a spontaneous fracture of the femur, in a young Frenchman who had suffered seven years with necrosis and very extensive abscesses of the limb, to me was assigned the duty of administering chloroform. There were also present Drs. Turner, Isaacs, Cochran, and William Otterson. The patient was in a feeble condition, rendering it necessary to sacrifice as little blood as possible. The tourniquet would not perfectly control the circulation, and, therefore, to Dr. Isaacs was allotted the duty of compressing the femoral with the fingers. Dr. Drake chose the double flap operation, and removed the limb very skillfully, being obliged to cut cautiously to escape one of the abscesses, and yet retain enough of the muscular tissue to make a good stump. I administered the anæsthetic with more than my ordinary caution, and yet just as the last artery was tied, the patient ceased breathing, the pulse could not be felt, and the jaw dropped. He seemed to be really dead. All the ordinary means, such as admitting fresh air, dashing water and brandy in his face and upon his chest, and compressing suddenly the ribs, were instantly resorted to; but finding no response, we commenced a most systematic and vigorous use of artificial respiration, according to the "ready method" of the lamented Marshall Hall. About every five seconds we forced the air from the lungs, by grasping the thorax upon both sides, and depressing the ribs. In the meantime, the natural elasticity of the thoracic walls would cause them to rise sufficiently to admit fresh air again to the interior. In addition to this, we turned the patient suddenly upon the side, and partly upon the face, and almost immediately back again, about three times in a minute. Our anxiety can be better imagined than described, as we worked on, not five or ten or fifteen minutes merely, but more than half an hour before we could be sure that there was any sign of life. Indeed, it was forty-five minutes before he was so thoroughly restored as to speak. To show how complete was the restoration, I will state that notwithstanding his weakness, he made the welkin ring while the doctor was putting in the necessary stitches. Under the circumstances, it was pleasant music to all present—it was in happy contrast to the stillness of death. Men less interested would have said "he is dead," after half the effort we made to save him; but we could not think of letting him die, and by strong faith blessed of God, we presented him again to his wife and widowed mother. I report this case partly to encourage others to persist long and unremittingly in their efforts to resuscitate asphyxiated persons, and partly to add another warning to those already given, against using chloroform of uncertain quality. This case occurred on the 6th of October, before Squibb's test was generally adopted. The specimen used was reported pure, and obtained at one of our best stores. It was afterwards tested, and proved to be exceedingly impure. We have now, however, an abundant supply, sold by our most reliable apothecaries, of that which will bear examination, and there is no excuse for carelessness in a matter so important. In conclusion, let me remark that every day's experience makes me more cautious in the use of this agent. Accidents have occurred, and will probably occur again, when it is used in greatest purity. I believe sulphuric ether, or a mixture of pure chloroform and ether, safer, and therefore better adapted to general use.

60 Court street, Brooklyn.

☞ *We are compelled, for want of room, to omit several short communications, and our Miscellanea.*

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PART FIRST.

ORIGINAL COMMUNICATIONS.

ART. I.—*Chronic Sinuous Abscess of Bone.* By THOMAS M. MARKOE, M.D., Surgeon to the New York Hospital.

THE description by Mr. Brodie of abscess in the tibia is so accurate and so complete, and his portraiture of its clinical features is so life-like and truthful, that, practically speaking, the subject would seem to be exhausted.

His account of the disease, however, embraces only that form in which the abscess character is maintained throughout, and in which the suppuration, taking place within the substance of the bone, is there pent up, by the dense unyielding nature of the surrounding tissues, and in its slow and painful progress towards the surface, gives rise to the distressing symptoms he so well delineates, and is instantly relieved by the simple operation he recommends.

There are, however, a certain number of these cases, and I suspect it is a majority of the whole, in which, with a similar commencement, a very different progress is observed, and in which the diseased actions, though quite as distressing and perhaps more tedious and intractable under ordinary management, present the features not so much of abscess as of its effects, not so much the characters of the primary disease as of its consequences or sequelæ. I refer to cases in which the inflammation of the bone begins as an acute attack, passing rapidly into suppuration, and in which the abscess thus rapidly formed, finds its way early to the surface, through the compact external shell of the bone, and is discharged, to the temporary relief of the sufferings of the patient, though, it may be, not greatly to his advancement towards a cure. From this point begins the marked difference in the progress of those cases which Mr. Brodie describes, and those to which I wish to direct attention. In the former, the abscess, once well open, goes on rapidly towards a cure. In the latter, the opening not being free, and probably not being direct, accumulations of matter take place within the cavity, and new inflammations and suppurations are excited in the bone substance surrounding the original focus of disease. New abscesses are thus formed, which either break into the original cavity, or discharge themselves upon the surface, by forcing their way through the compact outer layer of the bone. By the repetition of this process, the bone gradually becomes the seat of an inflammatory hypertrophy, and the patient is harassed for months by the constitutional disturbance and pain accompanying these repeated suppurations. After a time, varying in different individuals from a few weeks to many months, the disposition to the formation of new abscesses seems to cease, perhaps because all the cancellous tissue of the affected region has become involved either in suppuration or in hypertrophic induration; and the bone is left perforated in all directions by two, three, four, or more sinuses, generally all communicating with one another, and with a central excavation or chamber, which marks the position of the original abscess. From these openings is discharged, often in considerable abundance, a thinnish pus, sometimes offensive, varying in its quantity and quality with the condition of the patient's general health; which discharge, from the shape and position of the channels though which it comes, is indirectly and imperfectly evacuated, and by its retention keeps up and aggravates the chronic inflammation which is early set up in the surrounding bone tissue.

In this state, the parts may continue without alteration for an indefinite period of time, the disease not showing much disposition to make encroachments, but evidencing no tendency whatever towards improvement. The system gradually accommodates itself to the existence of the disorder, becomes accustomed both to the drain and the irritation, and the general health is often completely reëstablished. The diseased bone becomes an entirely local affection, only troublesome to the patient from the amount of pain and soreness he experiences in it, an amount which in different cases varies from a slight feeling of tenderness to constant and severe gnawing or boring pain, both conditions being occasionally interrupted by more or less severe attacks of acute inflammation, generally accompanied by an increase of suppuration and sometimes with severe constitutional disturbance. In this condition, the presence of the disease does not always interfere with a certain degree of the use of the limb, and thus patients are sometimes willing to endure, for an indefinite period, the pain and inconvenience which attends it. We have, in such cases, an opportunity to learn the natural history of the affection, and may appreciate the amount of its tendency towards a cure, a tendency which existing fifteen years in one of my patients, and about sixteen years in another, had not sufficed, at the time of operation, to leave any evidences of reparation, much less of cure. Among diseases which do not tend to progressive disorganization, this is a rare degree of obstinacy, and the reason of this intractability, and indisposition towards a cure, I take to exist, not so much in the nature of the diseased actions as in their unfavorable physical conditions. Thus, though the character of the inflammation in the bone may be perfectly simple and healthy, yet the resulting abcess has assumed the form of a deep cavity, communicating indirectly and imperfectly with the surface by means of narrow, ill-placed, and often tortuous canals. Such a condition of abcess in the soft parts is recognized as extremely unfavorable for the healing process; how much more so when, as in the bone, we have not only an unfavorable shape, but an unyielding wall, which deprives us entirely of the immense advantage which, in the treatment of similar abscesses in the soft parts, we derive from pressure in approximating the walls of the suppurating cavities.

This view of the local cause of the obstinacy of these cases of chronic abscess of the bone, is still further strengthened by several considerations. In the first place, there seems to be no necessary or usual connection of the inflammatory action with any constitutional vice, as scrofula, syphilis, or any other contamination of the general system. On the contrary, the affection seems to occur by preference in young, vigorous, and robust persons, and generally as the immediate consequence of injury, or of exposure to wet and cold, or of some other well-recognized cause of local disease. In the second place, the effect of remedies administered with a view to their constitutional or alterative effect, seems usually to be almost inappreciable in producing any curative change in the diseased part; and when any such favorable effect is seen in diminishing pain, or improving discharge, it is merely temporary, and the power of the remedy for good is soon exhausted. This was abundantly illustrated in three of my patients, in whom the disease had longest existed, from whose previous histories, as well as from my own persevering efforts in the use of remedies, I arrived at the conclusion that the cure was not to be accomplished, nor any important improvement secured, by any form of internal medication. Lastly, and in contrast with the inefficiency of medicine, the effect of the operation by which the physical conditions alone can be affected, seems to me the strongest proof that it is upon these physical conditions that the difficulty depends, a conviction which, I think, must force itself upon the mind of any one who has watched the beautiful reparative appearances which the wound presents from the moment of the operation, and the certainty and soundness of the cure which follows its thorough performance.

The following cases which have come under my own personal observation, are presented in the order in which they occurred to me, and nearly in the words in which they were originally recorded. This may account for some discrepancies in the descriptions, which are due to the change of opinion and to the altered point of view which more extended experience required. I have preferred to leave them just as they were taken, rather than square them all carefully with what I now consider to be the true views of the pathology and treatment of the disease. They will serve to illustrate the main features of what I think may properly be termed *sinuous abscess of bone.*

Case 1.—Sarah Elliot, æt. 42, England, married, was admitted to the N. Y. Hospital, Dec. 3d, 1852, with an affection of the upper part of the right tibia. When a young woman, she had suffered from a disease of the right wrist joint, which had finally necessitated the amputation of the hand. Though of feeble and nervous constitution, she had suffered from no seated disease after this, until, about 6 years previous to her coming to the Hospital, she noticed that the upper part of the tibia was somewhat enlarged. No pain or uneasiness existed in the part, beyond some occasional and wandering twinges, until last September, when without any well ascertained cause, inflammation commenced in the upper part of the tibia, involving apparently the knee joint. Suppuration took place rapidly, and the abscess broke just within the tuberosity of the tibia. The severe pain attending the formation of the abscess subsided, but much tenderness remained, and a good deal of thickening of the soft parts over the affected region of the bone. She was rarely free from pain in the part, but at times it became aggravated without evident cause, and was very severe, radiating up and down the limb; the synovial capsule somewhat distended with fluid. Rest, with poultices to the part, and soon after issues opened below the diseased points, with tonic and supporting treatment were ordered. With occasional variations, the pain and tenderness somewhat subsided, and she began to go about with a crutch. About the first of April she came under my charge. I found the abscess unhealed, and on introducing a probe, bare bone was found at the bottom of the fistulous opening. There had been no improvement in the use or condition of the part for many weeks, and she was very anxious to have something done for her relief. The fistulous abscess was dilated with compressed sponge, and proved to pass deeper into the bone than was at first suspected, and on the 30th of April an explorative operation was performed, the patient being under the influence of ether. The integuments were turned back by a crucial incision and the anterior face of the upper part of the tibia was exposed. The bone was found to be enlarged, and an opening leading into its substance was found, a little distance below the external orifice on the integuments. Into this opening the probe passed about two inches, its point being evidently in a large cavity, in which it could be moved about freely. As the probe touched the walls of this cavity, it gave the sensation of encountering bare bone, leading to the idea of a large sequestrum lying in it. By means of the trephine applied over the centre of the cavity, aided by chisels, the whole anterior wall of the abscess was removed, and its cavity thoroughly exposed. No dead bone was found in it. The walls gave to the finger a rough granular feel, as if from small particles of dead bone projecting on the surface. Regarding this as indicating a carious condition of the bone tissue, the whole surface of the cavity was freely scraped, until what appeared to be sound bone was reached. The wound was then stuffed lightly with lint and dressed open. Everything went on favorably in the cure. Good suppuration soon came on, and granulations sprang up, of the most healthy character, from the bottom of the wound. The boring pain from which she had suffered for so many months, entirely ceased; the swelling of the knee joint subsided, and she soon began to go about. She left the Hospital June 16th, and from that time continued steadily to improve. The abscess in the bone gradually contracted, giving issue to a few drops only of pus. All pain and soreness entirely ceased, and she regained her health and the use of the limb so completely that, during all the next year, she was able to go about and attend to her occupation, as well as before the disease in the tibia began. She was discharging the duties of a nurse in Dr. Muhlenburgh's Infirmary, when she was taken down with typhus fever in March, 1855. On her recovery, she found that the knee joint was again swollen and inflamed, and it became worse as she began to get about. She again entered the N. Y. Hospital in May, 1855; where by rest, leeches, poultices, etc., the inflammation subsided, but not until a small abscess had formed just below the knee, on the inner side of the limb, just opposite to the original abscess in the tibia. This last abscess broke June 3d, and soon healed entirely, there being no reason to suspect that either the substance of the bone or the cavity of the joint were implicated in it. The abscess of the tibia is quiet, free from pain, though it still gives issue to a small quantity of healthy pus. The probe still passes into the tibia, but the cavity of the abscess is very much contracted. Bare bone can be felt on its posterior wall. I saw her again in the fall of 1857. The abscess is slowly contracting. The probe enters about one inch and no bare bone is felt. The discharge has never entirely ceased, but is very small, and she suffers no inconvenience from the disease. Her general health is good.

Case 2.—Richard O'Brien, a mason, æt. 25 years, came under my care in the fall of 1851 with an enlarged tibia, which he said had been giving him more or less trouble, during at least fifteen years. It had commenced as a severe inflammation, following a bruise from a ruler on the upper part of the shin bone. The inflammation terminated in abscess, and a small fragment of bone was ultimately discharged. During the following two or three years, several similar abscesses formed and broke, each discharging a small piece of bone. During the whole period of 15 years, the suppuration had never entirely ceased. The upper half of the tibia was enlarged to more than twice its natural size, and over its anterior face the skin was stretched and adherent to the bone, which in this part felt rough, as if studded with coral like osteophytes. The skin thus drawn over the enlarged bone, was red, tender, and glazed, looking like an old eczematous surface. Towards the lower part of the enlarged portion of the bone, and on its anterior surface, an opening existed, from which issued constantly a moderate amount of thin, not offensive pus. At the upper part of the bone, another opening had existed for a long time, but lately had appeared to be healed up. A probe passed in at the lower opening, penetrated deeply into the substance of the tibia, and encountered here and there some bare surfaces of bone, but gave no evidence of any considerable sequestrum. The patient had full use of his limb, working every day at his trade, but was annoyed by a constant sense of uneasiness in the part, which, several times every year, would be varied by attacks of severe pain and inflammation, coming on from slight causes. These attacks, which disabled him entirely for the time, would last several days, and finally be relieved by a free discharge of matter from the opening.

Although no certain marks of a sequestrum could be detected in this case, yet the whole history and aspect of the affection was so much like that of necrosis, that I had no hesitation in so regarding it, and in that view operated as for necrosis in January 1852. By means of the trephine and chisel, a deep excavation was made in the central line of the enlarged bone, expecting to reach a cavity containing a sequestrum. No such cavity was found however, and it was only after long and careful search, using the probe as our guide, that it was ascertained that a continuous track existed deep through the bone, extending from the lower to the upper opening. After carefully appreciating the course of this fistulous canal, it was thoroughly exposed in all its length, by removing all of its anterior wall. From the depth at which it lay, and from the smallness of its size, it was difficult to determine the character of its lining membrane, but there was no sequestrum found, and apparently no carious disease of the surrounding tissue. The parts cut through were evidently bone in a state of hypertrophy and of a tolerably firm consistence. The wound was dressed with lint, and cold water applied externally. No undue inflammation followed the operation. Healthy suppuration soon took place, and granulations soon began to fill up the large vacuity caused by the operation. In about two months the greater part of the wound cicatrized, leaving at the upper part, however, a sinus leading deep down towards the original track. Several small flakes of bone were cast off from the edges of the cut, within a few weeks after the operation, and for several months little spicula were occasionally discharged. At the end of a year from the operation, the cavity in the bone was nearly filled up, and the wound was cicatrized excepting the upper sinus. On passing a probe into this, it did not penetrate more than half as far as it did originally, showing that the cavity was contracting; but some bare and rough bone was still felt on its bottom and sides. This feeling of rough and apparently dead bone had several times been observed during the healing of the wound, and, supposing it to indicate small portions of bone in the act of separating, the external wound was kept dilated with sponge tents, in order to allow of their more easy expulsion. None of them separated, however; on the contrary, the feeling of bare bone became gradually less and less distinct, and finally disappeared altogether. It seemed therefore possible, and indeed probable, that this sensation of exposed bone, which had occurred so constantly, was produced by the probe breaking off and displacing the granulations which were springing from perfectly healthy bony tissue; and that by avoiding the recurrence of injury, either with the probe or by the sponge tents, the process of cure would be expedited. The event seemed to prove the correctness of this view, for the sore gradually filled up, and in no long period healed soundly.—March 1854. It is now about a year since the sore finally healed, and in that time the limb has been entirely free from pain or uneasiness. It has diminished in size, the excavation made in the operation has filled up to the level of the surrounding surface, with what feels like a deposit of new bone, and he is able to perform his daily labor without difficulty or interruption. His general health is perfect and he said that he had not experienced any pain, worth mentioning, in the limb since the day of the operation.

Case 3.—John W. Cook, æt. 26, Ireland, machinist, was admitted into the N. Y. Hospital February 11th, 1857, with what was supposed to be necrosis of the left femur. The lower third of the bone was considerably enlarged, and on its inner side, about a hand's breath above the knee, is the orifice of a fistulous opening through which a probe passes upward and outwards into the centre of the enlarged femur, and comes in contact with bare and rough bone, though no mobility, as of a loose sequestrum, can be perceived by the most careful examination. He says that at the age of eleven years he had, without assignable cause, a sudden and severe attack of inflammation of the lower part of the thigh, accompanied with great swelling of the whole limb, which terminated in about three weeks in an abscess, which was opened at the point at which the orifice of the fistula now exists. The pain and swelling subsided, though the opening continued to discharge a little matter, and he was able to go about his ordinary business without much inconvenience. At intervals, some small pieces of bone came away, one of which was about an inch long. After continuing open during eight years, the fistula closed, and remained entirely healed during seven years, in which time he experienced no trouble from his limb, excepting some occasional attacks of pain lasting for a few days, and passing away without any signs of inflammatory action. About six months ago, he bruised his knee and suffered some considerable pain and swelling in consequence, which nevertheless had disappeared mainly, when, about three months ago, he again received a blow upon the part, which was followed by inflammation of the old region, which went on to suppuration, and the reopening of the old fistula, which had been so long healed. Since this occurred, he has suffered a great deal from his thigh, and being unable to walk upon the limb, he has been most of the time in bed. Ten days before his admission, as he was lifting himself along the side of his bed by his hands, while in a sitting position, he felt something give way in the thigh, and a bowing forwards and outwards took place about a hand's breath above the patella, and he found he had lost control of the limb, and could not move it without pain. On examination, a false point of motion was discovered about opposite the opening of the fistula, but no crepitus could be felt. Though no sequestrum could be certainly ascertained to exist, the diagnosis was made without hesitation, that the case was one of necrosis with fracture of the involucrum, and an operation for the removal of the dead bone was recommended. This was considered as the more imperative, as it was thought that the presence of the sequestrum would be likely to interfere with the union of the fractured femur. The operation was performed on the 17th February. An incision about five inches long was made along the inside of the thigh, passing through the fistulous opening, and carried down to the bone. On separating the soft parts from the bone, it was discovered that the apparent involucrum was open on its posterior surface, so that the finger could be passed into its cavity along several inches. At the depth at which the bottom of this cavity lay from the surface, it was difficult to decide whether the rough, bare bone, which could be felt by the fingers, was a true sequestrum or not. All was removed which seemed to be loose, or which appeared to be dead, and the walls of the cavity were left tolerably smooth, and, as far as the sense of touch could indicate, healthy. In exploring the condition of the walls after thus clearing the cavity, the finger, being pressed against the upper and outer wall, sunk into another distinct cavity, lying to the outside and above the original one, from which flowed out a quantity of thick not offensive matter, and from which one or two small irregular sequestra were taken. The portions removed were found on examination to consist mostly of masses of spongy tissue, some of it healthy and some of it necrosed or perhaps carious, conditions which are not always easily discriminated after the bones affected have been macerated and dried. Certain, however, it is, that no such considerable or distinct sequestrum as we expected to find was discovered, and that the condition of the parts could be better described, as a cavity with some caries or necrosis of its walls, than as a case of an involucrum imprisoning a sequestrum, as in ordinary instances of necrosis.

Everything went on favorably after the operation. Moderate and healthy suppuration took place, and he bore his confinement to bed extremely well. The limb was put upon the straight apparatus, and union of the fractured bone readily took place. About the 1st May some inflammation, with increased suppuration and fever, occurred. A probe passed in showed that the secondary abscess, which in the operation had been found above and to the outside of the original one, was still open and was probably the seat of the trouble. The probe also showed that this abscess was near the surface on the outer side of the thigh. A free counter opening was therefore made. This gave great relief, and he again improved. The counter opening soon healed, and the discharge from the original opening continued moderate and healthy. About the 15th of May, he was allowed to go about with crutches, and rapidly improved in health and in the ability to use the limb. He left the hospital August 25th, with a good strong limb, and with a very moderate and diminishing discharge from the wound. The knee joint, which had for months before the operation been growing stiff, does not seem to recover its motions as yet. Regular passive motion was enjoined with the moderate use of the limb.

In January, 1858, I saw him again, and found that the old abscess was still discharging, and that a new one had formed a little higher up on the outside of the thigh. This was opened, and a larger quantity of somewhat fœtid pus was discharged. The prospect of entire cure in this case is, it must be confessed, distant and doubtful.

Case 4.—George Brown, 19, Germany, seaman, came to the N. Y. Hospital under the care of Dr. W. H. Van Buren, November 17th, 1857, with a diseased condition of his left tibia. It commenced about fourteen months previously, after severe exposure in going round Cape Horn, and seemed at first of a rheumatic character, attacking first one ankle and then the other. He was recovering from the lameness following this attack, when, without evident cause, the inflammation concentrated itself upon the lower part of the left leg. He was again confined to his bed, and suffered much from pain and fever. An abscess formed in about three weeks, and broke on the anterior surface, about four inches above the joint. The swelling and inflammation still continued, and during about five months he was scarcely ever able to leave his bed except on crutches. During this time abscesses formed and broke at several points of the swollen limb, and at different times ten or twelve very minute pieces of bone came away, the largest not bigger than a pea. He never suffered any of the severe boring pain which is regarded as characteristic of abscess of bone. For the last few months, since the acuter symptoms have subsided, he has been able to go about most of the time, but not without great discomfort and inconvenience. On examination, the lower third of the tibia was found enlarged to more than double its natural size. Over it the skin was thickened and brawny, and presented the orifices of several sinuses which led down into the substance of the bone and discharged a moderate quantity of pus. The probe passed into any of these, goes deeply into the bone and encounters some rough, exposed bony points, but no distinct or considerable surface of sequestrum can be recognized. One of the openings on the anterior surface communicates with another near the internal malleolus, as can be shown by passing in two probes, one at either orifice, and making them touch in the middle. The ankle joint is, and long has been, a little swollen and somewhat stiff in its movements. His general condition is that of a healthy and vigorous young man. No suspicion of any syphilitic taint.

In the light of our previous experience, the diagnosis here was clearly made out of sinuous abscess of the bone, and the operation for its cure was performed by Dr. Van Buren, on the 19th, as from the proximity of the disease to the ankle joint it was feared that inflammation might at any moment extend to its cavity. By the trephine and chisel, the whole anterior wall of the cavity in the bone was removed, and every sinus freely exposed. They were all found to communicate with one another, and with a cavity as large as a hickory nut, which lay so near the ankle joint that there appeared to be merely a thin shell of bone between it and the cavity of the joint. The sinuses which opened on the anterior surface of the bone, were entirely exposed by removing their anterior bony covering. Two of the sinuses, however, penetrated the bone so deeply, and had their external orifices so far back, that it was not thought best to cut away all their anterior wall for fear of too seriously weakening the bone. The portions of their track which were nearest the central cavity, were therefore freely exposed, while their openings through the compact structure of the tibia were left intact. The whole of these cavities were lined by a smooth, soft, reddish, and very vascular membrane, which to the finger felt very thick, and seemed to be composed of abundant firm granulations. Through this membrane, the bone tissue could be felt, but it was not anywhere extensively exposed, or apparently diseased. The bone cut through in the operation was of moderate firmness, and appeared to be simply hypertrophied; it bled very freely when cut. The wound was dressed with a view to its granulating and filling up from the bottom.

Although a slight attack of erysipelas occurred on the third day after the operation, everything went on as favorably as could be desired. Healthy suppuration, and good firm florid granulations, were soon formed, and the wound filled up rapidly. On the 15th of December, it was noticed that the sinuses, whose orifices had been left on the inside of the limb, were healed entirely. He is entirely free from pain. No interruption occurred to the progress of his cure, which was complete when he was discharged from the hospital.

Case 5.—Edward Smith, æt. 19, I saw at Bellevue Hospital by the kindness of Dr. C. D. Smith, under whose charge the patient was admitted. He had presented himself at the Hospital, Nov. 11, 1857, with an enlargement of the lower part of the left tibia, which he said had commenced with an acute inflammation of the leg, last July. This attack he attributed to a very prolonged exposure in fishing for oysters, while the water was yet quite cold. He went to bed quite ill that night, and the next morning, great pain in the lower portion of the leg announced the commencement of a severe inflammation, which soon terminated in suppuration. It was opened in about two weeks and a large quantity of offensive pus discharged. Several other abscesses formed at intervals, and from them small fragments of dead bone were discharged, the largest not larger than the finger nail. He continued to suffer a great deal of pain and discomfort about the limb, and the irritation was so easily aggravated by handling or exercise, that he was confined to his bed during most of the time. When admitted his general condition, though obviously affected by long continued suffering, was tolerably good. The lower third of the tibia was much enlarged, and the integuments over it thickened and inflamed. Five orifices were situated on the anterior surface, into each of which a probe could be passed deeply into the substance of the bone. Here and there the probe seemed to grate against bare bone, but no distinct sequestrum could be discovered. The lowest orifice was about two fingers' breadth above the ankle joint, which was not in any way involved in the disease. The discharge was not large, but somewhat offensive. The case was pronounced to be a sinuous abscess without necrosis, and the operation was performed by Dr. Smith on the 28th of November. By the trephine and chisel, the sinuses were carefully followed through the bone and their anterior wall removed, thus laying them open to the bottom. They were found all to communicate with one another, and at the deepest part of their course, towards the lower part of the bone, the cavity expanded to a size sufficient to admit the end of the finger; but at no point was there any distinct or considerable chamber, which, in most cases of this disease, indicates the seat of the original abscess. No sequestrum was found in any part of the cavities, but their walls were in places rough or granular to the feel;

giving the impression of an ulcerated or carious condition of the surrounding bone tissue. The external aspect of the enlarged part of the bone was rough, and the periosteum over it much thickened. The pieces of bone cut away by the trephine and chisels, showed the natural spongy substance of the bone hypertrophied, but, as far as could be ascertained, not otherwise altered. The wound was dressed lightly with lint. Some trifling feverish reaction followed the operation, but healthy suppuration was soon established, and on the 10th December he was reported as improving rapidly.

Dr. Smith has since informed me that the further progress of the case was entirely satisfactory, and that the wound healed entirely, and apparently soundly, within a few weeks after the operation.

As deduced from the above cases, and from a few others less perfectly observed, it appears plain to me that the pathological anatomy of the disease is an inflammation of the cancellous structure of the ends of the long bones, rapidly terminating in suppuration. The matter thus rapidly formed, early approaches the surface of the bone, and soon perforates its outer compact shell, and then, without obstruction, reaches the surface of the integument and is discharged. The deep cavity in the bone, thus communicating with the surface by a narrow and generally somewhat indirect channel, is not properly evacuated and the lodgment of pus in its most depending portions provokes anew, inflammation and suppuration, which extends the original excavation and usually finds its way to the surface by some new channel, and thus, by a repetition of the original morbid process, the disorganization of the bone assumes the extent and severity with which it ultimately comes under our notice. These repeated inflammations cannot occur without exciting vascular action in the surrounding parts, and we have accordingly inflammatory hypertrophy induced in the affected portion of the bone, and later in the disease, induration and eburnation, particularly about the abscesses and their connecting sinuses. With this action in the bone, we have a corresponding chronic inflammation and thickening of the periosteum, with osseous deposits from its inner surface; so that the surface of the hypertrophied portions of bone ,when stripped of their periosteum, have a rough, irregular, granulated appearance, in all respects similar to the surface of the involucrum in cases of necrosis.

The discharge, during the earlier periods of the complaint, varies in quantity and quality with the varying activity of the inflammation; but in the later stages, when the tendency to abscess formation is exhausted and the parts have become consolidated by chronic inflammation, the discharge is moderate in quantity, and in quality generally thin, sometimes sanious, and very rarely offensive. Caries of the walls of the cavities may occur, if the constitution be predisposed to scrofula or contaminated by syphilis; and, in the same way, necrosis of small portions either of the original compact, or of the morbidly indurated cancellous tissue, may take place, as an accidental complication of the case, but neither caries nor necrosis has anything to do with the original character of the affection, nor do they play any important part in its later history and progress.

A most important feature in the anatomy of these cases, is the disposition shown by these abscesses to approach and to involve the joint near which they are situated. This tendency in the mere chronic form of abscess, which has not been able to make its way to the surface, but remains a source of irritation pent up within the swollen end of the bone, is recognized by Mr. Brodie, and indeed by many other observers, and is justly considered one of the most dangerous features of the disease. The same tendency is observable even in the open abscess we are describing. Though there be no pent up fluid seeking an outlet through the joint, yet the tendency seems very strong for the excavations to extend to a very close proximity to the nearest synovial surface; and even when no direct communication takes place, the inflammation of all the tissues round the abcess easily spreads to the joint, and rather by its constant recurrence than by its immediate severity, seriously compromises its integrity.

The symptoms of this affection have been so fully described, in the sketch of its history at the commencement of this communication, as not to require recapitulation, but its resemblance to, and its diagnosis from necrosis, demands a moment's notice. The resemblance is striking and obvious. The age of the patients; the most frequent causes of the attack; the early symptoms of inflammation of the bone terminating in suppuration; the numerous and successive openings; the enlargement and induration of the affected region; the unchanging and intractable character and the interminable duration of the disease,—are all marks of identity, which I believe habitually deceive careless and superficial observers, and which require, in order to a proper discrimination, much care and a thorough knowledge of the two diseases, and their distinctive characteristics. There are, however, some features which are diagnostic.

And first, we have the situation of the affection. In necrosis the compact structure, and in abscess the cancellous structure, are respectively the ones implicated. We have, therefore, necrosis ordinarily affecting the middle portion of the long bones which is mainly compact tissue, while abscess is formed at the enlarged extremities where the more vascular, and therefore more highly organized spongy, tissue predominates. How uniformly this law is obeyed I cannot say, but in eight cases which I have seen there has been no exception to it.

Secondly, the actions set up in necrosis, particularly if a large portion of the calibre of the bone has died, are for the formation of new bone around the dead sequestrum, and consequently the enlargement is sometimes extremely great, from the thickness of the involucrum, which, it must be remembered, more than supplies the place, as far as mere bulk is concerned, of the bone destroyed. On the other hand the actions which go on in connection with abscess, are merely those of thickening of the surrounding bone, by a process of inflammatory hypertrophy, strictly analogous to the induration of the tissues round any series of chronic abscesses in the soft parts. The enlargement, therefore, which accompanies necrosis is very great, while that which exists with abscess is comparatively moderate. I made some few examinations, with the assistance of Dr. W. H. Draper, microscopist to the Hospital, of several specimens taken alternately from a hypertrophied bone, and from an involucrum which was of entirely new formation, but no difference could be detected by the microscope, sufficient to be of diagnostic value.

Thirdly, the early history of these cases of abscess of bone shows, that with each opening formed, there is usually a piece of bone cast off, in a few days or weeks after the opening takes place. This does not occur with the abscesses of necrosis; and it appears to me that the explanation of the difference between the two affections in this respect is not difficult. Where suppuration occurs within the substance of bone, it may well be supposed that the rapid course of the matter towards the surface, bursting as it were through the outer shell, before the slow action of the osseous vessels can provide by absorption for its quiet transit, will or may in many cases produce the death of a small portion of the compact tissue which offered the first resistance to its progress; which small fragment thus killed will separate and make its appearance in a longer or shorter time after the opening of the abscess. In necrosis, on the other hand, all the compact tissue implicated dies in mass, suppuration occurs outside of it, and between it and the periosteum, and no separation of fragments can take place, until the whole mass begins to loosen from its attachments, and not then except some violence has been used to loosen them. The pieces which come away are described as being very small, and are often likened to a finger nail; and I have so frequently met with them in the history given me by the patients of their earlier sufferings, that I cannot but consider them as very characteristic.

Fourthly, I think there is generally less pain, less inconvenience, less inability and less discharge produced by the abscess in its chronic condition, than by the necrosis while the sequestrum is present. So much so is this the case, that it must be extremely rare, for a man with a large sequestrum in his tibia, for example, to be able to be about his ordinary occupations with the same degree of comfort, as is often enjoyed by those affected with chronic abscess.

Lastly, the most important of all the diagnostic signs is derived from the information given by the probe. In necrosis there is usually no difficulty, if the openings are free, in finding the bare and rough surface of the sequestrum. In the abscess, on the contrary, with openings equally free, through which the probe finds its way easily into the substance of the bone, no bare bone is discovered, or if any appears to be touched, it is so slight and uncertain in its indications, as to leave us in doubt whether the sensations may not be produced by the rude use of the probe, rubbing off the granulations from the surface of otherwise healthy bone.

From the view which has been presented of the anatomical features of this affection, the character of the operation necessary for its cure is directly deducible. If the difficulty lies essentially in the physical conditions of the parts, then these physical conditions must be altered. If the abscess lies deep from the surface, it must be freely exposed to that surface, and made, as nearly as may be, a part of it. If the channels through which it is discharged be narrow and indirect, they should be made large and direct. In short, if the obstinacy of the affection depends upon its character as a sinuous abscess, that character must be as completely as possible destroyed by converting it into an open wound. In carrying out this indication, it must be remembered that it is a cardinal one, and that upon the thoroughness with which it is done, will depend the rapidity and completeness of the cure. I am entirely convinced, that the imperfection of the cure in Case No. 1 was due to the fact, that, not fully appreciating the importance of thoroughness in the operation, I contented myself with opening the cavity of the abscess by removing a portion of its anterior wall, but did not, as I now think it necessary to do, remove the entire covering of the suppurating cavity, both upward and downward, and convert it into a mere groove or excavation on the surface of the bone. Case No. 3 presents another illustration of the same principles, and leads me somewhat to doubt the general applicability of the operation to extensive abscesses in the femur. The diseased bone is so much more inaccessible, when situated in the muscular mass of the thigh, and the operation necessary for fully and freely exposing it, is so serious and extensive that I fear in most cases, it would be left incomplete and therefore ineffectual. Besides, even if the operation be well and thoroughly done, the suppurating cavity in the bone, is so covered in by thick soft parts, that, by their healing, it in a very short time approaches again to the character of a cavity with narrow outlets, and tends to reassume the appearance and behavior of a sinuous abscess. When, however, the operation can be thoroughly done, as it can in the tibia, and in most of the other long bones, and when in addition all the fistulous tracks can also be freely laid open, by following them carefully with the chisel and gouge, the cure of the diseased condition will be speedy and complete.

It is usually best to commence the operation on the bone with the trephine, and particularly in old cases, where from long and frequent inflammation, the osseous tissue is much consolidated. After freely exposing the main cavity by the trephine, then with the gouge, the whole of its anterior wall, and such other parts as may seem necessary, in following up the fistulous tracks, may be chiselled away. It is very desirable to have the tourniquet applied to the limb above, not so much for the saving of blood, of which there is usually but little lost, but with the view of keeping the cut surfaces of the bone clean, that we may be able to judge correctly of the course and condition of the various tracks which it may be necessary to follow. As far as practicable, there is no doubt that it is best to follow up and lay open each of the sinuses which lead from the central cavity to the surface. That this is not absolutely necessary, however, is shown by the satisfactory result in Case No. 4, in which two sinuses which penetrated the bone quite far back, were, from motives of prudence, left untouched, and nevertheless healed rapidly and soundly, as the rest of the wound began to fill up. If the principal part of the operation be thoroughly done, this will probably be usually the case with any sinuses which may be allowed to remain. In any case where it seems necessary, no hesitation need be felt in making extensive and deep chisellings of the bone, for the repair is abundant and certain; yet, at the same time, it is well to avoid weakening the bone, by removing its compact substance transversely, as we never can be certain, that by some mischance or misbehavior of the wound, or of the constitution, the reparative actions may be delayed or imperfect.

The after treatment is usually the simplest possible. By light dressings of the wound, which is of course left wide open, it granulates from the bottom, and generally begins to heal at its edges before the excavation is filled up. No tents, or sponges, or deep dressing in with lint, will be required, and time only is necessary to complete the cure. As soon as the wound has fairly begun to fill up, and to contract, if it be in a healthy condition the patient had better be allowed to go about with a roller bandage to support the limb, that he may secure the benefit of air and exercise. If an unhealthy condition of the sores should persist, or if caries of the bone should be suspected, constitutional treatment will of course not be neglected; but in most cases, when the operation has been well done, nothing further will be required to restore the patient to perfect health.

March, 1858.

ART. II.—*On the Pathology of Leucorrhœa as it exists at the present day.* —*Its relation to Secondary Syphilis, Gonorrhœa, Purulent Ophthalmia Neonatorum, etc., etc.* (Continued from the number of this Journal for November, 1857.) By WILLIAM C. ROBERTS, M.D., Fell. of College of Physicians and Surgeons of the City of New York, etc.

[We propose in this number of the *N. Y. Journal of Medicine*, to fulfill a promise made in that for November preceding: to continue our analysis of the work of Dr. W. Tyler Smith, on Leucorrhœa, and certain concomitant topics. The first in order, and not the least in interest is,]

THE RELATIONS BETWEEN SECONDARY SYPHILIS AND LEUCORRHŒA.

Too little importance, the author is persuaded, has hitherto been given to this subject. In secondary and tertiary syphilis leucorrhœa is very common.

Is there a specific ulceration of the neck and os of the uterus, diagnostic of secondary syphilis, in connection with leucorrhœa? Gibert describes a form and appearance of granular surface, a *granular erosion*, which he considers as a distinct species of syphilitic ulceration, in many cases succeeding to chancre.

Bennet denies the general syphilitic character of most of these cases, considering them as "inflammatory." "Some few may be primary or secondary." We doubt this. If ever any be primary or secondary, why not all, or else the mere appearance of the sore furnishes nothing definite as to the diagnosis.

"I have, however," he says, "seen ulcerations of the cervix in syphilitic patients present the grey, pseudo-membranous covering which is seen in secondary syphilitic ulceration of mucous membrane." In the venereal character of *such sores*, especially when coëxisting with symptoms of secondary disease, *we* should be inclined to place confidence.

Dr. Tyler Smith, in *his* opinion, goes rather farther, we think, than is warranted by a strict inductive philosophy. "It appears to me that in *almost* all cases (*sic*) in which leucorrhœa and disease of the cervix uteri are present in women suffering from constitutional syphilis, the uterine symptoms are *a genuine manifestation* of the constitutional or secondary disorder."

Without the other evidences of constitutional syphilis, would they be known to be such? and if not, what is there distinctive or diagnostic about them? How is a man, looking at a granular erosion on the cervix uteri, attended with leucorrhœa, but *unattended* with constitutional symptoms, to say whether such erosion or discharge be syphilitic or not? The same remark has appeared to us to apply with equal force to that "erosion" which Ricord has endeavored to characterize as diagnostic of gonorrhœa in the female. It is met with in too many cases, according to our observation, in which no infection could be established, to be possessed of any great diagnostic value.

Ashwell, judging from his own observation, as well as from the recorded experience of Cullerier, Ricord, and Bennet, considers the far greater number of these non-chancrous ulcers to be only inflammatory ulcerations; "*although there can be no doubt* that some are secondary syphilitical sores." Nothing very distinctive in appearance can, it is evident, possibly exist about these very problematical erosions, from which any decided opinion can be drawn.

How does secondary syphilis obtain in the female constitution?

1st. As a direct consequence of imperfectly cured primary infection on the outer or inner genitals, known or unknown to the patient at the time. (Chancre and bubo.)

2dly. "When the mother, being in health, becomes impregnated (contaminated) by a husband affected with secondary syphilis."

Here is enunciated a pathological law of great importance, and in which the best authorities of the day are, we believe, agreed: "*the possibility of a woman being diseased* (*secondarily*) *by a husband tainted with secondary syphilis.*"

It has long been known that this was true, so far as the fœtus was concerned, and equally was it known and acknowledged that an infant secondarily diseased might communicate secondary syphilis to its nurse, through the medium of a sore on her nipple. But the fact, as applicable to the woman herself, infinitely more rare, has of late only, we believe, received the notice and sanction it merits.

The author adds, to complete the sentence, "and receives the secondary syphilitic disorder through the *medium of the ovum.*"

Let us pause for a moment and inquire whether this be a correct statement of the pathological fact. Does, indeed, the mother become diseased through the medium of the ovum, or does she do so through the medium of the male semen, which being absorbed, furnishes the poison which is taken into her circulating system, either outwardly diseasing her or not, becomes a part of her blood and is conveyed into that of the fœtus, producing in either, or both, the latter more frequently, secondary disease?

The semen of the male meeting, whether in the uterus or ovary, or tube, the ovum, impregnates it, and then begins the new series of actions, kept up by the blood of the mother, which ends in the formation and growth of a new being. The semen is the diseased and diseasing agent, the *materies morbi.* Is it not more reasonable to suppose that a primary and direct absorption of this vitiated fluid into the vessels (system) of the mother, diseases her fluids, and through them the fœtus, than to suppose the reverse, or that the "ovum," which can only mean fœtus, performs that part in the economy of the mother? The expression, "through the medium of the ovum," seems to us, at least, very obscure, if not inaccurate.[*]

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[*] The following passage seems to express the meaning of the author on this point: "We know that in such cases (of secondary leucorrhœa) the ovum is frequently diseased. We cannot wonder, then, that the mother becomes diseased, for by *means of the fœtal circulation*, the blood of the male parent is *brought almost directly* into contact with the female." (?)

Let us see in what light this question is viewed by a contemporary author. "The fœtus *intra uterum* may contract syphilis by the fact (or existence) of the elements of formation or nutrition, which he receives from his parents."

"May not the circulatory system of the mother serve as a medium of communication of the *vitiated semen* of the man to the embryo, and so isolate and circumscribe it as to prevent it from infecting herself." "Since *the altered semen of a preceding father*, has left in the wife an impression capable of infecting the subsequent issue of a second one," etc. "At a third period of the embryonic life, the two vascular currents of the mother and embryo inosculate (*s'abouchent*), the relations become intimate and direct, and it is then that *transmission by the blood*, a true contagion, whatever may be said of it, may be and is, in fact, induced. It is impossible to suppose that the fœtus can escape the source of intoxication, inevitable, it may be said, since there is continually distilled, drop by drop, into its veins, a poison against which nature furnishes it with no means of defence. (Diday: *Traité de la Syph. des nouv. nés*, Paris, 1854.) How much more reasonable and easy is it to conceive of the fœtus being affected by the fluids of the mother, even though she herself remain free from any external evidences of contamination, than to imagine some mysterious infection of the mother through the agency of the fœtal blood. The question seems to be simply, how can the

Is it possible that a woman can be infected with secondary symptoms who does not become pregnant? Because, if this be so, the ovum has (probably) nothing to do with it, that is, directly. Contact, absorption of the diseased semen, its entrance in some way into the circulation of the mother, must be admitted as the only mode of explaining her infection: it is surely her *blood* and that of the fœtus which is diseased; and whence does the fœtus obtain its blood and nourishment save from the mother? Indirectly, it is true, the fœtal tufts of the placenta being merely bathed in the maternal blood, but drawing nourishment from it by their own cells, which have the power of selecting and of elaborating their own materials, which must link the infectious germs. Then, if, in the case of non-pregnancy, the ovum have nothing to do with the secondary infection of the mother, why may not the theory which explains it in that case, be applied with equal force and truth to explain the disease of the ovum and fœtus in conception and pregnancy?

At any rate, *what are we distinctly to understand by the expression, "receiving the secondary syphilitic disorder through the medium of the ovum?"*

The question which we have proposed to ourselves, can a woman be impregnated with the poison of *secondary* syphilis

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ovum be infected save through the medium of the mother's blood? Can the mere contact of diseased semen with the *ovum*, in the ovary or uterus, suffice for its contamination, and through it (the ovum) the mother become diseased? Is it not probable that, whether visibly or not, the cohabitation with an infected husband, invariably, in a greater or less degree, taints the fluids of the mother, and through them the ovum.

"An infected parent may communicate to his wife, or to a woman, a syphilitic taint similar to his own, *by the absorption of the seminal fluid, in which the morbific power exists*, by the mother's system, and the subsequent corruption of her own constitution, without, of necessity, any primary *or secondary symptoms* having *been induced in her*." (*Rankin*, No. 10, 181.) This and other references, I have derived from a paper in the September No. of the *New York Journal*, 1848, by N. H. Chesebrough, M.D., etc., entitled, *Summary of Observations on Syphilis in Infants*, read before the N. Y. Obs. Soc., so ably compiled, so succinct and yet so comprehensive, so well reasoned, so excellent a *résumé*, in short, of the subject, as to make us deeply regret that it has not (to our knowledge) been succeeded by other contributions to our science from the pen of its gentlemanly author.

Dr. Balfour, of Edinburgh (*Ed. Med. Journal*, Oct., 1856), is rather behind the learning of the day. The secondary syphilitic affection which occurs in a healthy woman, pregnant by an infected husband, "arises," says this very late authority, "from the taint which exists in the system of the fœtus, derived from the father; because unless *she does become pregnant*, the female exhibits no such symptoms" (!) "showing that the mere fact of coitus between her and her husband is not sufficient to produce the disease." The inaccuracy of this opinion generally, though in individual instances it may be true in a lesser or greater degree, is, we hope, sufficiently demonstrated by the preceding observations; and it is a proof that the truth is not generally known and acknowledged, that error appears thus positively asserted in so excellent a periodical, and from the pen of so eminent an observer.

except through the medium of conception, is one of interest and importance, as a part of the present investigation of an obscure and not yet thoroughly settled question. Let us give it, therefore, such consideration as the present state of our science admits of.

Case 5 of Wetherhead's work on Hereditary Transmission, page 88, is in point on this subject. A woman has a healthy child, aged ten months, at which time her husband gets a primary venereal sore. Five months after, the mother complains of ardor urinæ, excoriation of the vulva, and leucorrhœa, and the child becomes affected with secondary syphilis. The mother subsequently has syphilitic tonsillitis and iritis, and flat mucous tubercles of the pudenda. "The foregoing case," says Wetherhead, "has these points worthy of notice. 1st, the symptoms under which the wife labored were syphilitic in their nature, *yet there was no evidence that the disease had been communicated to her in its primary form.* The disease could only have been communicated to the child through the medium of its mother's milk." The only difficulty about this case seems to be the possibility of the mother having had a chancre which existed and healed without her knowledge; though this is improbable. Case 13 is one of "probable communication of the poison in its *secondary* form from the husband to the wife." In Case 17, the husband had chancre and secondary symptoms, of which he was considered *to be perfectly cured* at least three months before marriage. Five or six weeks after, the wife had copper-colored eruptions on the face and forehead, sore throat, excoriation of pudendum, purulent discharge, and subsequent general secondary affection. It was communicated to the fœtus in utero. In Case 21, the woman never had a primary affection. Four or five months after marriage she had excoriation of the labia pudendi, purulent leucorrhœa, and irritable bladder and ardor urinæ: subsequently ulcerated sore throat, headaches, etc. She did not conceive for many months; the child had dropsy and diarrhœa. In Case 23, the husband had chancre and abscess before marriage, and was considered cured; and was so, as far as external appearances went, though the taint was probably never perfectly removed from the system. The wife had never been free, since marriage, from purulent leucorrhœa, flat tuberculous eruptions about the vulva, and *specific* (?) inflammatory hypertrophy of the uterus. The above cases certainly concur in establishing the probable truth of a statement of the author, that the genital secretions in men may continue to be charged with poisonous matter for a long time after the disease is cured;" and, taken together with such other evidence as we shall hereafter adduce, render it more reasonable to refer the infection of the mother, and subsequently that of her child, to the diseased semen of the parent, than to any communication of disease to her by the medium of a diseased ovum, or its diseased membranes. Both modes may possibly exist; but the former seems most direct, rational, and easily to be accounted for.

A very eminent authority, Dr. Porter, of Dublin, in a series of articles entitled, "Essays on Syphilis," in the *Dublin Journal of Medical Science*, vol. i., 1857, discussing the question whether there be any other animal secretion than pus, by which the poison of syphilis can be introduced, contributes some cases which throw light on the subject. Believing the disease to be one of the blood, and it thoroughly tainted, he deems it not unphilosophical to assume that every secretion, and every product of secretion, should be tainted also. The seminal fluid, he thinks, possesses this most unhappy quality of conveying infection without the intervention of a single drop of pus or purulent matter; and it is very curious that he should consider this, " as far as I know, *a new assertion*," and doubt its being generally accepted. In proof, he states that a gentleman married being, as he supposed, perfectly free from any syphilitic taint; a few months after, his wife was attacked with condylomata at the anus, tubercular swellings of the pudendum, cracks at the corners of the mouth, and patchy elevations on the dorsum of the tongue; all this time the husband never had a sore of any description. *The wife had never been pregnant, and, therefore, could not have contracted the disease from the fœtus in utero.*"

This one case, as far as it goes, is a conclusive answer to the question we are investigating. In 1836, Dr. Porter had a patient in the Meath Hospital who had secondary syphilis in the worst forms, who had never had a primary sore, or any local affection, and had never had a child, and, " therefore, could not have been contaminated by a fœtus." The husband had had a chancre two years before his marriage, cured without mercury. In July, 1840, says Mr. P., a married gentleman, while absent from home, contracted a sore, not deemed venereal, and treated without mercury. In September he had syphilitic sore throat: he refused to take mercury. In January, 1841, the wife, advanced in pregnancy, had "button scurvy." The child died of unmistakable lues within a week, having been begotten three months before the father's first contraction of the disease, and must have derived the secondary poison from the mother (herself infected by the vitiated fluids (semen) of the father), at a period considerably posterior to conception.

In a case reported by Dr. P., from the *Dublin Medical Press*, a woman had venereal sore throat and bubo. She never had the least sore or abrasion on the genitals. The husband had been cured three months before marriage of syphilis, primary and secondary. If anything more seemed wanting than the preceding facts, which seem to bear the very impress of truth and correct observation, to establish the following proposition of Mr. Colles, the language of the following extract from his pen would seem to supply the hiatus: "Before I enter on the subject of syphilis in infants, I must state a fact, which, although I am unable to explain it, has yet been forced upon my observation by more than five or six instances, namely, *that a newly married man, who is himself free from every appearance of syphilis and every other disease, shall yet infect his wife in such a manner that secondary symptoms shall appear in her in a few months after marriage, and these not preceded by any primary symptoms, or by any discharge whatever from the genitals.*" Mr. Porter thinks that he has observed enough of incontrovertible facts to establish, as a law of syphilis, "*that the semen of a diseased man deposited in the vagina of a healthy woman will, by being absorbed, and without the intervention of pregnancy, contaminate that woman with the secondary form of the disease, and that without the presence of a chancre or any open sore, either on the man or woman.*"

It seems difficult, if not impossible, to refuse an unhesitating assent to the truth of a proposition so fully and clearly enunciated: if so, what becomes of the idea of the secondary infection of the woman, in all cases, through the fœtus, or its membranes? The practical importance of these facts, in reference to the character of the female and the peace of families, invests them with an interest greater than that which they derive from their consideration as mere matters of scientific inquiry.

In continuation of this subject of the laws regulating secondary infection, let us further state that Dr. Porter goes on to assert, as extremely probable, and supported by general observation, if not by particular instances, and as such, generally admitted, that the fœtus may be contaminated, issuing from parents in whom no secondary symptoms had ever appeared: of whom one never suspected the possibility of her infection, and the other after the lapse of many months, or even many years, being in perfect health apparently, had forgotten the previous existence of any disease. Among these cases are the frequent miscarriages and premature births of dead and putrid children, in seemingly healthy parents. It is singular the intensity of a poison thus seemingly dormant, quiescent, and inactive. In the fœtus it shows itself complete and concentrated, thoroughly and entirely finished, passing through no stages, but attacking at once all parts and tissues of the body, and capable of communication. It is not, in the face of daily observation, possible not to be persuaded that "the poison may be dormant in a man for months and years; that that man may infect his wife; that neither of these parties may exhibit a tangible symptom. We shall here allude to a fact in the history of secondary syphilis, to which, on a revision of this article, we find we have but slightly alluded. "Of an equally convincing nature also is the proof afforded," says Dr. Bulkley, of this city, well known for his proficiency as a Dermatologist, in an elaborate essay on Syphilis in Infants (*New York Journal of Medicine and Surgery* Nov., Oct., 1840, which, though rather pathological and therapeutical in its character, is, nevertheless, rich in facts appertaining to the history of the subject), "by the truth of children with undoubted symptons of the disease, *while the mother had never, at any time, suffered from any of its effects, either primary or secondary.*" Cullerier and others have recorded cases of analogous character, as Bertin, Colles, Bulkley himself, Bacot (the disease showing itself in the *second* pregnancy) etc. It is curious that instances of infantile contamination are most frequent after the development of *secondary disease in the mother*, the child *in utero* often escaping the effects of primary disease (Wallace, Essay Cit.), and yet may, year after year continue producing diseased and pocky children; that any of these children may be tended and suckle by its mother without the infection being returned on its parent source, but that, given to another woman, it will soon and certainly contaminate her." It is to be regretted that the impossibility of protecting against the influence of a poison so subtle, so enduring, so pervading, and yet so latent and insidious, deprives the foregoing interesting facts of much of their practical value. Is a man never to marry that has once had syphilis, lest he infect his wife and contaminate his offspring? Is a woman to insist upon proofs of immunity before entering into the marriage contract, or the nurse, before she undertakes the care of an apparently healthy babe, the offspring of healthy parents? This is clearly impossible, and the disease must, therefore, in spite of all that may be known, said, and written about it, continue from time to time its devastating course, the only wonder being, that instances of its virulence are not more frequent.—*Dublin Medical Journal*, vol. i., 1857.

"*Is there a direct transmission of secondary syphilis from male to female, and from nurse to child, without the intervention of any primary disorder?*"—(Lib. cit.)

The first part of this inquiry involves the preceding argument. The reply of the author to the second will sômewhat surprise the reader. "I certainly entertain doubts if this can occur. I have never seen a case in which the proof of the occurrence of such a transmission was clear *and free from doubt.*" That in *any* case in which secondary syphilis occurs in a female, nurse or not, *some* doubt of her chastity, or possible previous infection in a more direct way, to herself, perhaps, even unknown, must always exist, cannot be disputed, however improbable it may appear that such *could* have been the case; and on this basis it may be safely affirmed that the question admits of no definite settlement. Let us hear what are the views of recent authorities on this important and interesting, and as we had thought, generally admitted topic.

Ricord believes that a man suffering from constitutional syphilis may impregnate a healthy woman, and the germ may, in the first place, have constitutional syphilis, and in the second, communicate it to the mother, without the existence of any primary disease in either the mother or child. But he does not believe that a child affected with secondary syphilis *can communicate the disease to a healthy nurse,* (!) or that a nurse affected with constitutional syphilis can convey the disease to a healthy infant through the medium of the milk. These opinions are not, we believe, shared in by many very eminent members of the profession, and can be disproved, we think, by an array of facts both startling and convincing.

Whitehead and Wilson believe that a child having a congenital, or secondary syphilis, may infect its nurse in the act of sucking, the nurse having been previously free from the disease; and the nurse thus diseased may become a medium of infection to others; that an infected woman, suffering from secondary syphilis only, may infect a healthy child through the milk.

Instances of infection by the *milk* of the mother are not numerous; and yet it seems probable that whereas all her fluids may be considered as tainted, her blood especially, out of which her milk is formed, and as the child may be cured by medicine administered to her, this should be also. Batin says he is convinced by facts that both *the milk and saliva will infect without any local disease,* in very inveterate cases. Bell was of the same opinion. (Bulkley.) "*Chancres* appeared on the tongue, etc., of a child whose parents had never had a venereal symptom, the mother having eight days before nursed a diseased child with chancres in the mouth." (Bertin.) Whence came the infection in this case, unless from the saliva of the diseased child deposited on the mother's nipple? In connection with all this array of facts, tending to prove the extreme contagiousness of secondary syphilis, *it must be* remembered as well established, *that a certain proportion of mothers and children escape the different modes of infection altogether.*

It is curious that these opinions do not find favor with our author any more than with Ricord, although supported by the concurrent testimony of numerous and eminent observers in all parts of the world, suppported by an immense body of unimpregnable testimony, and seemingly as clearly proved and generally conceded a fact as any in medical science. Dr. Smith furnishes some cases which serve only to show that although infection of the nurse, if possible, was most probable, it yet did not occur.

Let us listen to Diday on this subject: "Many children born of very healthy parents return from nurse with symptoms of constitutional syphilis. When have they contracted it? Very certainly during suckling. From whom? From the woman who nursed them. How did it begin? Most commonly by the mouth. What were its first symptoms? Generally superficial ulcerated mucous papules." Ricord's idea that its only cause in the nursling is a primitive indurated chancre contracted from the nurse, Diday ridicules and combats, and it seems really untenable.* But on the subject of the communication of the disease *from the nursling to the nurse*, by the medium of sores about the mouth, etc., Diday is much less full than might have been expected in a recent book, written professedly on the subject of infantile syphilis. On the other hand, the contagiousness of the secretions of secondary sores has never been demonstrated in the adult (*i.e.* by inoculation); and this constitutes a ground of objection to the general admission of what seems so well established by the concurrent observations of so many practitioners. On page 249 of his very excellent volume, already cited, Diday enters upon the consideration of the question: "Can an infant affected hereditarily with (for example) mucous *plaques* in the mouth, give the same disease to a healthy woman who suckles it?" Those who deny this, claim, first, that in every case the infected child had a primitive chancre. Such a case is almost without a precedent. In the second place, the mother of the infected nursling, they say, must have contracted a primitive chancre, which, in country villages, whence wet nurses are supplied to the capital, is of very rare and difficult occurrence compared with the number of infected nurslings met with in practice.

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* "Take notice," says Ricord elsewhere (*Lettres sur la Syphilis*, p. 107), "I do not absolutely deny this mode of transmission from the nursling to the nurse, and vice versâ. I only say that its existence is not proved."

Thirdly, is the difficulty how the infant should have contracted a primitive chancre in the mouth, or the nurse one on the nipple or breast?

Other sources of objection, drawn from the characteristics of the sore, its induration, progress, etc., and the arguments of the author, we pass over, as bearing little on the refutation of the main fact now so generally believed and conceded, and so well demonstrated by hundreds of instances, that a woman in perfect health, having never had primary nor secondary syphilis, may become infected, by the contact of her breast or person with congenital or acquired secondary syphilis on the part of a nursling, however it be acquired, whether from a primitive chancre on its own person, as claimed by Ricord, or having imbibed it from a diseased father, mother, or foster mother. The extraordinary contagiousness of this secondary virus merits a passing notice, and two very interesting cases are noted by Diday, in one of which seven, and in another many more, persons suffered from such infection.*

Some of the laws by which the transmission of secondary syphilis from the nursling to the nurse appears to be governed, are curious, and perhaps inexplicable. Among them is that laid down by Colles, and assented to by Diday, Baumés and Egan, that "a new-born child affected with congenital hereditary syphilis, even with sores of the mouth, never infects its *mother*, though it may disease its nurse." That is, provided the disease in the child comes either from the mother, who is then protected from a recurrence, or from the father, in which case the infecting influence of the fœtus on the mother suffices for her immunity. (Diday, p. 285.)*

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* Lest it do not occur to us again to allude to it, let us here ask whether it be really true *that a woman affected with secondary syphilis, derived from a nursling, can affect her husband? and if so, with what?* Primary or secondary symptoms? The following case, abridged from Diday, seems to prove it: "A country woman nursed a foster baby with ulcers in the mouth and stains on the body: and also allowed it to suck two of her sisters. Soon they all had ulcers on the nipples and genitals, and osteocopic pains. *They communicated ulcers* (*syphilis generally*) *to their husbands.*" Unless one is determined to disbelieve in the purity of these two women and their husbands, the case seems conclusive; and if not, the coincidences are striking and singular. In another case of infection from a diseased nursling, *the husband got flat pustules and a chancre in the throat.* Do not again these cases give color to a suspicion that the sores of congenital and hereditary syphilis *may be*, in reality, chancres after all—that the mucous plaques may be, according to Ricord, degenerated chancres, and the virus of secondary congenital or hereditary syphilis may be identical with that of primary chancre, equally contagious and productive of similar consequences when introduced by inoculation. So far as our researches at present extend, the question has not been particularly considered.

The following observation in Whitehead on Hereditary Transmission, London, 1851, favors this idea. In a case of secondary description from an infected husband (p. 72) it is stated that the "denuded spots on the labia pudendi were soon deepened into *excavated ulcers of chancrous aspect with indurated bases and yellow surfaces.*" Is it not altogether likely that contact with such a sore would produce a chancre in the male, or that such would be the result of inoculation with the matter? Portal relates that an infant affected with (secondary) syphilis was taken from Paris to be nursed by a woman at Montmorency. The child contaminated the nurse, the nurse her husband, who infected another woman, and in a short time the whole town became more or less infected." Now, what was the source of infection here by which a man, receiving it from a woman, gave it again to another woman? Is the virus of *secondary* syphilis thus energetic and transmissible? Has it the properties of chancre matter? What had the man who infected the woman? What had she who infected the next man, and what had he? All secondary syphilis? If so, how curiously contagious. If not, how does it differ from the virus of primary chancre and the sores from chancres?

A child contracting primitive chancre with suppurating bubo, away from home, may infect a healthy mother, who has no previous immunity, and contracts the disease as any one else may do, who has intimate and frequent relations with a diseased child. (Diday, 287.) The law, if immutable, is practically legally important. The healthy mother of a diseased child infected by its father (sec. cong. syphilis, on the father's side) may nurse it with impunity. The infection from the diseased mouth of the infant is rapid: in many cases, two or three days only suffice. (*Lib. Cit.* 291.)

The relations between secondary syphilis and leucorrhœa, as revealed by the condition of the os and cervix uteri.—Too little importance, says our author (Smith, 99), has been given to this connection. Chancre is rare, but in secondary and tertiary syphilis, leucorrhea is very common. Gibert and Bennet discovered in syphilitic patients, "granular erosions," which the latter admits *may* be primary or secondary, but inclines to believe, are for the most part, "inflammatory." Smith, on the other hand, thinks "that in almost all cases in which leucorrhœa and disease of the os and cervix uteri are apparent in women suffering from constitutional syphilis, the uterine symptoms are a genuine manifestation of the constitutional or secondary disorder." In many cases (in most of those which Dr. S. has related), the "leucorrhœal symptoms" have been almost the only signs of syphilis in the mother and the leucorrhœa has not got well until the syphilis had been treated. The child may be born at term and diseased, or still-born and putrid, or otherwise, or the woman abort.

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* In order that this should be true, it must be admitted that the introduction of the poison of syphilis into the system, like the vaccine, variolous, and scarlatina poisons, secures against a second. Is this so? Is a person affected with secondary syphilis proof against a new and primary infection? The virus of secondary syphilis in the child is extremely active, whether it proceeds from mucous *plaques* or buccal sores. Is it equally in the adult? Will similar sores of secondary character produce contagious effects in adults? If so, what will it produce? Primary chancres or secondary symptoms? A very interesting field of inquiry is here opened, which we have neither time nor opportunity to cultivate. There is something peculiar in this buccal sore of congenitally and hereditarily affected children. It is extremely contagious: produces on the mother's nipple and elsewhere *ulcers*, and a constitutional disease which seems to be occasionally communicable to the healthy husband, constituting true chancres. What, then, are these sores in children? Are they chancres? Are they inoculable?

We shall cite a case in reply. Mr. Egan (*Dub. Quar.* 1846, p. 337) inoculated the patient with virus from an ulcer as large as a prune kernel on the breast (contracted from the mouth of a diseased nursling), which ulcer had unequal and slightly everted edges. *The inoculation did not succeed.* The ulcer healed, *and afterwards the patient broke out with copper-colored spots, pustules, and condylomata!* Does it not appear, in spite of the failure of the inoculation in this case, as if these sores possessed very much *the characters of true chancres*, highly contagious, producing a primary ulceration and a secondary eruption, etc. Can it then be, we repeat, that the congenital sore possesses the nature, if not the character, of chancre, producing first a primary ulcer, and then, and soon, a secondary disease?

The following case leads to a similar inference. A woman was infected by a diseased child, and infected her own from her sore nipple. The child, when seen by Gibert, presented *a well characterized chancre* at the right corner of the mouth, etc. The infant thus affected with "*the primary sore*" enjoyed good health, etc.

The appearances are not pathognomonic. The above-mentioned facts lead to mere inference. The cervix uteri is generally soft, swollen, injected, *and entirely denuded of epithelium;* hangs loose in the vagina, the os gapes, and a thin purulent matter, looking like honey and water, exudes from the orifice. In all this there is surely nothing specifically characteristic. *This* is more pointed: "occasionally *warty growths* are found upon the os;" "the upper part of the vagina and os is sometimes apthous."

Let us now see what additional light is thrown by Whitehead on the characteristics of syphilitic uterine leucorrhea and the appearance of the uterus. "Under the microscope, the discharge is invariably found to contain pus globules. The neck or body (both or either) are hypertrophied, indurated, erythematous, dark red, glistening, studded with enlarged follicles, the cuticle excoriated, os as if burst, apthously ulcerated, the inner surface inflamed and ulcerated, implicating the margin of the os and labium uteri, and warty excrescences are found.

These appearances, as described by W., are less characteristic even than those named by Smith. His "entire *denudation of epithelium*" is wanting. W. admits that the first and second of the appearances enumerated, are by no means peculiar to syphilitic affections, though traceable to them. The third (dark red, glistening mottled erythema) pretty clearly, he thinks, reveals the syphilitic taint and the chances of its transmission. Excoriation without ulceration is highly suspicious; but *apthous ulcerations*, slightly raised, irregularly circular, grey, isolated incrustations, which, when brushed off with lint, leave a red granular surface, bounded by a well defined, slightly elevated margin, about one quarter to one half inch in diameter, are, as far as the author knows at present, *peculiar to the syphilitic diathesis*, and indicate great danger of a fatal transmission to the offspring. We commend these observations to those to whom opportunities are afforded for their verification. *Ulceration of the orificial disc* is also suspicious. Than *warts*, there is no phenomenon more certainly indicative of a syphilitic diathesis; they exist about the os and cervix, vagina, vulva and anus. In summing up this subject, we fear it must be acknowledged that we have no certain sign of constitutional syphilis derivable from the appearance presented by the uterus; yet should it be remembered, that morbid changes exist in connection with the discharge, in themselves suggestive and deserving of attention and treatment.

We have, in a preceding part of this article, expressed, with surprise, the opinion of our author, that the generally entertained idea that syphilis might be communicated to a healthy person by suckling a child affected with secondary congenital syphilis, is unproved. He states that he has frequently sought for such instances, and hitherto without success, and gives a case, in which, although extremely probable, no such transmission did occur. Hunter, Ricord and Acton strangely enough hold the same opinion, and yet the works of Diday—whose former position of surgeon-in-chief to the Venereal Hospital at Lyons must give much weight to his opinion—of Hey, Porter, E. Wilson, Whitehead, Colles, Cazenave, and others, contain innumerable instances to the contrary, so convincing, it would seem, as to leave no doubt on the subject. Let us examine it a little by the light thrown on it by some of these investigators.

Says Diday: *Can an infected infant, with, for example, mucous tubercles in the mouth, give the same disease to a healthy woman who suckles it?* He cites the following case from Ambrose Paré, which we abridge: A respectable woman hired, to assist her in suckling her infant, a diseased wet nurse, who gave the disease to the child—the child to the mother—the mother to the husband, and he to two other children who eat, drank, and slept with him, he not deeming himself diseased. Paré recognized and healed the disease successfully, and the wet nurse was flogged.

Bouchut (*Rev. Méd.*, mai, 1841) relates the following case as one of the most conclusive known: A healthy mother took a nurse child two months old. Ulcers ensued around the base of her nipples, and the axillary glands became engorged. Soon her own child became affected with pustules. She then gave up her nursling and was cured. It had its face covered with pustules, a nasal discharge and violet-colored spots on the nates.

Diday himself relates a case in which a diseased child gave to its country nurse, first, a red spot below the right nipple, then general papular syphilis, mucous tubercles of the mouth, impetigo of the scalp, etc. Her genitals and those of her husband were healthy. He then combats judiciously the absurd idea of Ricord, that in every case of apparent transmission by the infant, it must have had *primitive chancre of the mouth!* but it is not worth while to reproduce his arguments. No one surely can believe this to be the *only* source of contagion in such cases.

The extreme contagiousness of sec. cong. syphilis we have already alluded to. Sperino, of Turin, has demonstrated its infectiousness by *inoculation.* (*La sifilizzazione studiata qual mezzo curat. e preserv.* Turin, 1853, p. 25.)

A diseased child was confided (Petrini *vide* Diday, 269) to a country wet nurse. Its mother had been diseased. It soon died. The nurse had been in the habit of giving it to be nursed by two of her friends—sisters. They soon had ulcers of the nipple and genitals and osteocopic pains, and communicated ulcers *to their husbands*, and to their children which died. The wet nurse alone remained uninfected.

The following case is terribly interesting and conclusive. A foundling diseased the breast of Mme. H. Her son, a boy of ten years, drew them so successfully that others employed him to do the same for them. Of several thus infected, Mme. D. communicated to her child ulcers of the lips and mouth, and also to the child of her sister, Mme. Deraw, which in its turn, diseased its mother. Her eldest daughter, carrying to her mouth the spoon with which she fed her infected brother, contracted ulcers in the throat, and the husband, cohabiting with his wife, got flat pustules and a *chancre* in the throat. The boy, the originator of this terrible extent of suffering, on examination, was found to have a vast *indurated chancre* (Ricord's criterion of a true chancre is its induration) in the throat and a perforation of the palate consequent on a corroding ulcer. If this case be authentic, as there seems no reason to doubt that it is, it seems to establish, beyond question, the subject at issue.—*Jour. de Méd. et Pharm.* Brux., 1853, p. 92.

A soldier gave his wife syphilis, who produced an infant that had in after days ulcers in the throat. Its wet-nurse received the same malady, and became intensely infected. A child which she nursed became similarly affected; and a girl who took care of it had pustules in the mouth and on the vulva. The mother of the last child had taken another suckling, which became diseased, and infected its sister of ten years of age. The mother of these two latter children, fifty years of age, contracted syphilitic symptoms; and thus seven persons were directly or indirectly affected, from one child, in the most serious manner.—(*Italian Jour.* Diday. p. 271.)

Mr. Egan, in the *Dub. Quar. Jour.*, 1846, p. 337, tells us of a woman of excellent moral character whose husband was equally irreproachable, who took a nursling seven weeks old, which soon became diseased, its mouth, at the end of two months, becoming ulcerated. The woman soon after had a fissure in the breast, which extended into an ulcer the size of a plum kernel. It was cured, and soon after, she had copper-colored blotches, pustules on the nates and thighs, and condylomata on the vulva. These disappeared under iodide of potass., and subsequently she had ulcers in the throat.

A diseased mother confided her child to a healthy nurse, who, when examined carefully by M Baumés, *had nowhere* any signs of syphilis, and who was attentively watched. Eighteen days after, the child had ecthyma syph.; fifteen days after, the nurse had grey, uneven, jagged ulcers around both nipples, at the commissures of the labia, mucous tubercles of the anus, and copper-colored furfuraceous spots on different parts of the skin. Cured by corr. sub.

R. was wet-nursing a child which had, besides other evidences of disease, a large ulceration on the upper lip, and soon died in hospital. M. Bardinet, and Dr. Tuilier, physician-in-chief to the Hospital of Limoges, scrupulously examined the wet-nurse and her husband. They had nowhere, either of them, any marks of ulceration, recent or ancient; the former had not even leucorrhœa, or vulvitis. Around her nipples were greyish ulcers, with neatly cut edges. Subsequently, her vulva was covered with mucous tubercles; she had tubercular syphilis and blotches, and a large ulceration at the bottom of the throat.—*Jour. etc., de Bruxelles*, 1853.

Other cases are cited by Diday, which, from their similarity, it is unnecessary to reproduce, sufficient, we should suppose, to convince any one not determined to oppose theoretical quibbling to direct observation, in relation to a fact, which Ricord even, as we have shown (v. note on p. 331), does not absolutely deny, though he considers it not proved by severe analysis and rigorous observation of facts. It should be remembered that the mouth, in infected infants, is ordinarily last affected, and that while it is not so, nursing is comparatively, not wholly, harmless.

We will here take occasion to repeat the pathological law, to which we have previously alluded, that an infected mother, whether primarily so or through her husband, with or without evidences of the existence of the poison in her system, and yet being infected, never receives from the child the disease which it has, because syphilis, like the other specific animal poisons, does not, as a general rule, appear twice in the same individual. Very brief intercourse between the nurse and child—three or four days only—suffices for transmission of the poison in its full force and intensity.

Whitehead informs us that "lues venerea may be transmitted through the medium of *lactation*, either from an infected nurse, or vice versâ." De Hery (*Méth. Cur.* Paris. 1552), fully understood this mode of contamination. Wiseman observes (*Chir. Treat.* 1676. Book vii. p. 4), that "nurses may either infect children, or be infected by them;" those even *that have no ulcers in their mouths, or other visible signs of lues.* (?) Astrne admits the contagion of lues, "*usu veneris et lactatu.*" (*De Morb. Ven.*) Van Swieten relates a case from Barry, of a woman, who having a venereal ulcer of the mouth, diseased, by sucking their breasts, "some women of the better sort to a miserable degree." "The husbands of these women were also infected and tormented *with chancres*, from which the venereal poison was so diffused, that they had ulcers on the inside of their mouths, and red boils all over their bodies. The woman who caused all this evil had a small ulcer at the root of the tongue, and a fresh cicatrix inside of the lower lip. Van S. also quotes from Vercellon an account of a whole village having been more or less infected, from several charitable women, moved with compassion, having given their breasts to two foundling infants infected with venereal disease. Portal relates the infection of the whole town of Montmorency by an infant sent to be wet-nursed from Paris. Hey relates the following case *in extenso*, which we as much as possible abridge, as the general inferences are all we desire to impress upon the reader. A blind woman, with venereal ulcers of the angles of the lips, caught from a diseased woman, drew the breasts of several other women. One of these (Mrs. B.) soon after perceived a swelling of the axillary glands, and a soreness in her throat; subsequently, becoming pregnant, miscarried. In due time after, she bore a child which had constitutional syphilis; and again, another child, which was similarly affected. Colles relates a similar case (the woman contracting the disease from a nursling, and then diseasing her own child), and observes, that he doubts "whether a diseased nurse could infect the child, unless she had ulceration of the nipple." "My own observations lead to the belief," says Whitehead, "*that the poison is frequently communicated without the existence of any such* lesion. (p. 228.) Again, on p. 237, he says, "there can be no doubt that the virus of lues is readily admitted through this channel (the nipple), although the surface be perfectly sound at the time; a fact which has been noticed by several writers." Nor is this more extraordinary, or improbable, than that the infection should be received by a physician, or midwife, through an unexcoriated finger, or by a sound lip from a kiss by diseased lips, or by the contact of a diseased child's body with a healthy one, or by feeding with the same spoon as the diseased child, of most of which the work we are noticing contains many and very interesting and well-told illustrations, justifying the remark of Biett, that there exist certain forms of syphilis with which every species of contact may prove dangerous.

The reader will probably have gleaned from our preceding review of Dr. Tyler Smith's work his conviction of the close connection which exists between syphilis, leucorrhœa, and repeated abortion; a practical relation which deserves attention, and is assuredly of great importance. Such cases he considers more frequent than those depending simply on forms of simply inflammatory uterine disease, as supposed by Bennet. "There can, I think," says he, "be no doubt that in all cases of leucorrhœa with repeated abortion, or still-births, or cases in which the child dies shortly after birth, the health of the male parent before marriage" (and let *us* add, that of the female also) "should be strictly inquired into." The cases he himself has related—those of Whitehead and others, so numerous in these pages—show forcibly the terrible consequences of an inattention to this point, and consequent error in the diagnosis, but also the very great advantages to be gained by subjecting *both* parents to a thorough and well-conducted course of anti-syphilitic treatment, both as to the health of the parents, the chances of impregnation, and of the woman going to her full time and bringing into the world a healthy fœtus, which, otherwise, seems almost impossible.

We again take leave of our author for the present. In the remarks which we have appended to his text and that of others, we have offered to the reader a *résumé* of the facts connected with constitutional syphilis, as noted and recognized at the present day, which, however incomplete and ill-arranged, and however disjointedly and inaccurately considered, owing to want of leisure and opportunity, tolerably well represent the present state of our science in reference to the disease, and cannot, we think, be deemed either uninteresting or unimportant.

From what precedes may be deduced the following:

Corollaries.

1st. Nothing positive as to the diagnosis of syphilitic infection can be drawn from the appearance of the os and cervix uteri, in connection with leucorrhœal discharge. Granular erosion, (Gibert), ulcerations covered with grey pseudo-membranous coats, denudation of epithelium, warty growths, red, glistening erythema, and aphthous ulcerations are most suspicious and characteristic.

2d. A woman, or wife may be diseased, infected, or contamnated by a man affected with primary or secondary syphilis.

3d. The fœtus *in utero* is liable to secondary syphilitic infection from a diseased parent, one or both.

4th. The mother is affected in one of two ways; first by the absorption of the male semen from her vagina; this is most probable and frequent; second, from the blood of the fœtus, (diseased) ovum (and *membranes*?) Such women are either barren, abort, or bring forth dead or disordered children.

5th. The fœtus is diseased by the receipt into its system (circulation) of the vitiated fluids of the father, mother, or both, and, in its turn, is supposed to become an infecting agent.

6th. A woman may become infected with secondary syphilis through the medium of coitus with a diseased man, *without conception:* or any communication to her of the disease in its *primary form.*

7th. The husband himself, under these circumstánces, may be free from every appearance of syphilitic disorder, primary or secondary.

8th. Parents, in whom no *secondary* symptoms had ever appeared, and in whom the possibility of, or actual precurrence of infection had been unsuspected, or forgotten, may, even after the lapse of years, procreate and produce contaminated fœtuses.

9th. Primary disease in the pregnant mother, much more seldom than secondary, affects the fœtus *in utero.*

10th. Infants contract secondary syphilis in several ways: first, by imbibing the milk of a diseased nurse; second, by the contact of their mouths with ulcerations about the nipple of the nurse; third, by contact of their person with sores on the bodies of infected persons, of spoons, sponges, of water warmed in an infected mouth. (See also Cor. 6th.)

11th. Infected infants may disease their healthy nurses and attendants by the contact of their mouths and lips, containing secondary sores, with the nipple, or of such sores on other parts of their persons, as by kissing, handling, etc.

12th. The saliva of the diseased infant may disease the healthy nurse or mother, without any local disease on the part of either, and even in cases when the mouth of the infant *is* sore, no abrasion, or excoriation of the nipple is necessary, to insure infection on the part of the mother.

13th. The saliva of a diseased infant, applied to the healthy nipple of an uninfected nurse, may, in a few days after even, disease another infant subsequently applied to it. Disease is not, however, *always* communicated to the nurse by the child, or the reverse. Nor do infected parents always disease their children.

14th. Women secondarily infected by nursing diseased infants, can communicate secondary syphilis, and in some instances, what would *appear to be chancres and buboes* to men who cohabit with them, who, in turn, disease other women, as well as their own children.

15th. An infected mother, whether so from primary syphilis, or diseased through the medium of her husband's fluids, or if such be possible, by her diseased ovum, *never receives from the child* the disease which it has, although it be capable of infecting a healthy nurse—because her system is protected by the influence of the former poison, which, like other animal poisons, does not usually appear twice in the same individual. In other words, an infected nurse or mother, may nurse an infected child with perfect impunity.

16th. Secondary syphilis may be communicated to a sound lip, finger, or surface, by simple contact with a sore, or substance impregnated with the virus, as a sponge, spoon, cup, etc.; certain forms of syphilis existing, in which every species of contact may prove dangerous.

17th. In all cases of leucorrhœa, with repeated abortions or premature births, either of healthy, and especially, of diseased, or dead, or putrid infants, the ante-nuptial health of both mother and father should be carefully inquired into: syphilization being probable.

18th. Secondary syphilis has been inoculated and reproduced by Sperino of Italy.

Hereafter we design briefly to consider the remaining topics named in the heading of this article, and any deficiencies which may be discovered to exist relating to that which has now engaged our attention, shall, if possible, be supplied.

Art. III.—*Notes on the Practice in the Hospitals of Paris. The "Ecraseur," "Electric cautery," Maisonneuve's method of dividing strictures, etc., etc.* By George Suckley, M.D., late Assistant-Surgeon, United States Army.

In watching the practice at the various Parisian Hospitals, we find many methods in vogue at one or the other, which are either entirely new or else but partially known to members of the Medical Profession in the United States. Some of these plans of treatment appeared confined, for the most part, to their originators, or to persons who, having adopted them, ride their "hobbies" on all occasions. They would, for example, *if possible*, amputate with a "drainage tube," tie an artery with an "écraseur," or trephine with the actual cautery, after all of which applications, most plausible reasons would be assigned by the enthusiastic operator, showing, to his own satisfaction at least, the eminent superiority of his plan of treatment over all others.

Some of the prevailing "hobbies," however, have their advantages in special cases, and are, therefore, entitled to our careful attention, and, although descriptions of several have been more or less perfectly given in the different American Medical Journals, it may not be amiss to describe the manner in which they are at present applied in Paris, even at the risk of repetition.

The "Ecraseur."—The use of the "écraseur" is confined to two hospitals, La Pitié and the Lariboisière. In the latter Chassaignac every Monday morning expatiates upon the merits of "*l'écrasement linéaire*," accompanying his oratory, as far as possible, with practical manifestations of its powers. In his hands the instrument certainly works admirably in many cases, especially in operations about the anus, tongue, cervix uteri, or vagina, or in almost any other situation when there is danger of excessive hemorrhage, as well as in cases where the loss of even a small quantity of blood cannot well be borne.

The surgeon above named gives the following summary of the benefits accruing from the use of this instrument, as compared with the knife:

1st. *The almost total absence of hemorrhage.*

2nd. *The rarity with which the employment of this instrument is followed by profuse suppuration, erysipelas, or* PHLEBITIS AND ITS CONSEQUENCES.

It is almost needless to say that union by first intention is almost entirely done away with when this instrument is used. As offsets to this are the facts that union by first intention is rarely got in the Paris hospitals after the knife, and even if obtained, it is of course of but little account when compared to the excessive frequency of "purulent absorption."

Among at least a dozen operations that I have seen performed with this instrument, there was one which pleased me very much. This was the removal of a hemorrhoidal tumor of about the size of pigeon's egg, situated just within the verge of the anus. The tumor having been pulled down with a peculiar "clawed" instrument, the chain of the "écraseur" was passed around its base, and drawn moderately tight by hand. The instrument was then "worked" in the usual manner by raising and depressing its pump-like handle, each elevation or depression being accompanied by a sharp "click," at the same time drawing in about a twelfth of an inch of the chain. The instrument was worked very slowly, eight minutes elapsing between the commencement of the operation and the complete separation of the tumor. The amount of hemorrhage during, and at the end of the operation, would scarcely fill three teaspoons. It took twenty-four elevations and depressions of the lever of the instrument to execute the operation. The patient, being under the full influence of chloroform, was operated upon while reclining on his side.*

Outside of the Lariboisière the "écraseur" does not appear to be a favorite in the Paris hospitals, with the single exception of La Pitié, where Maisonneuve uses it not unfrequently, and carries its application with his usual ardor, or recklessness, to an extreme. He has attempted to amputate with it several times, but the details or results of these operations are far from being perfectly satisfactory; although the number of such amputatations is yet too small to allow the formation of a practical conclusion of the general merits of the process. In the last case it was used for the amputation of an arm at about its middle, but the screw of the *bones breaker* (I know not what else to call it) caused the bone to snap at a point some distance above the insertion of the deltoid, and, in endeavoring to twist the loosened extremity clear from the insertion of the muscle, the wound was forced open, and the brachial artery commencing to bleed freely, had to be tied. The unfortunate patient died after several weeks, but it was thought that his death was more properly owing to an independent disease of the lungs, and not a direct sequence of the operation.

(Since writing the foregoing another amputation with the "écraseur" has taken place in time for me to insert its details before mailing this paper):

Amputation of the forearm with the "écraseur."—A girl of

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* The "écraseur" although now well known to many in the United States, is, perhaps, a sort of unintelligible article to some. For the benefit of such, the following rough explanation may be kindly received: Suppose you wish to divide a sphincter ani by this method when operating for fistula in ano—Take an ordinary chain-saw with very blunt teeth, pass one end up the fistula, and bring it out through the anus. This being done, draw the two ends through a strong metallic double canula or tube. Then by means of a small windlass at the further end of the tube, tighten the chain until it has, in the course of ten minutes, cut through the sphincter, and is entirely free. Thus you have planned, put together, and operated with an extemporaneous "écraseur," which contains in principle all the elements of one of "Charrière's best," but which lacks, of course, finish, strength, and the improved power that an instrument made by a professional instrument-maker possesses.

17, employed in a manufactory of percussion caps, was, on the 1st of February, severely injured by the explosion of a large number of these articles. Among other injuries more or less severe, the right hand was so shattered, that on the day following the accident Maisonneuve decided upon amputating the lower end of the forearm. The girl having been rendered unconscious by chloroform, the operation commenced. The first desideratum was to break the bones at a point about two inches above the wrist, which was accomplished by means of a screw working in a complicated set of machinery that I cannot attempt to describe in words. The next thing was to apply the "écraseur" sufficiently below the point where the bones were broken, to give sufficient covering to the stump. After this latter instrument had its chain considerably tightened upon the portion that it surrounded, an incision was made around the forearm at a point just above the wrist, and the lower fragments twisted and pulled through it. The chain of the "écraseur" was then tightened, and the operation completed. No tourniquet was used, no vessels tied, and not a teaspoonful of blood lost.

As the patient was in a better state of anæsthesia than is common to find in Paris, she only shrieked moderately during the middle of the operation. The time consumed during the amputation was about 15 minutes; that from the commencement of the working of the "écraseur" *six minutes.* The advantages expected to result from the operation are as follows: 1st. Less hemorrhage, as we have seen. 2nd. Less danger of *phlebitis*—a very important consideration to surgeons of crowded hospitals.

The ultimate result of the case will, of course, be the best proof for or against the sagacity of the measure.

The operation, as a *spectacle*, seems very barbarous. If the patient is well under the influence of the anæsthetic, the semblance of brutality is greater than the reality; and if the operation is more successful than the others, the end ought to justify the means. It is well known that phlebitis, and the so-called "purulent absorption," are the great evils with which the Parisian surgeons have to contend. Of late years nearly all the larger amputations have proved fatal from these causes. Maisonneuve, in reflecting upon the wretched condition of affairs, came to the conclusion that no means could be more disastrous in results than the ordinary employment of the knife in these operations. He therefore considered it his duty to cast about for some other means of obtaining a successful process.

After the "écraseur" had been employed for some time in removal of tumors, for dividing fistulæ, etc., etc., and it had become evident that the amount of cases of purulent absorption was much reduced in proportion, he imagined that could he apply the same method to the removal of the limbs, that he would be justified in expecting more satisfactory results. How to sever the bones became the next consideration. Viewing the comparative infrequency of purulent absorption as a sequence to a compound fracture, he concluded to avail himself of the idea thus thrown out, and by following his object pertinaciously, he has after many experiments, and the trial of eight or nine different kinds of apparatus, at length brought this method of operation to a moderately satisfactory position.

It seems to me, however, that the common employment of this method of amputation will scarcely answer in our democratic country, and even in France, had it not been for the discovery of anæsthetics the process would never have come within the scope of the wildest flight of a surgical imagination.

There are two principal models of the "écraseur" in use. That of Chassaignac is worked by means of the pump-like handle already spoken of, each elevation and depression of which draws in a certain fixed amount of the chain.

The other is the improved machine of Maisonneuve, by which the power is applied by a screw. This latter instrument has the following advantages:

1st, it has more power; 2d, it can be worked more slowly and not by jerks; 3d, it is not fatiguing to the operator; 4th, it is more simple in its construction, and therefore more readily cleaned or repaired; 5th, it is cheaper.

Maisonneuve's "écraseur" for *amputating* is of extra size, and much greater strength. The ordinary chain is replaced in this instrument by a sort of rope made of tough, strong iron or steel wire.

The following are the prices of these instruments at Charrière's:

Chassaignac's "écraseur"			45	francs.
Maisonneuve's	"	ordinary size	30	"
"	"	" with attachment admitting the use of chains of two sizes, two chains being furnished.	45	"
"	"	for amputations—large size	80	"
"	"	" with the "bone-breaker," as at present used.	150	"
Extra chains for the common-sized instruments, each			5	"

Chassaignac's "drainage tubes."—Chassaignac is very fond of introducing small tubes of india-rubber, perforated on their sides, by which he gradually draws off the pus of an abscess. He applies them more particularly to the treatment of the chronic or sub-acute abscesses so commonly met with among the poor of large cities. The modus operandi of applying the "drainage tubes" is to transfix the abscess with a long trocar inclosed in its canula. This being done, the trocar is withdrawn, and the flexible tube passed through the canula in its place. The canula is then removed, leaving the abscess now only transfixed by the drainage tube, the ends of which are then tied together, and the tube thus left until it is thought advisable to remove it permanently, or for the purpose of substituting another. The drainage tubes vary in calibre from ⅛ to nearly ¼ of an inch, their internal diameter varying from that of a knitting needle to that of a "No. 3 Hutchinson's bougie." A common elastic catheter of small size, with holes cut along its sides, will answer very well as an extemporaneous drainage tube. In effect, these drainage tubes are simply *hollow india-rubber setons*. They draw off the pus very well *at first*, but after a short time the most of this fluid passes *along the side of the* tube, as is the case with the ordinary *seton*.

An interne in Chassaignac's service says, that frequently after removing a tube and slitting it open, the interior is found *dry!* But this is not apparent to the vision of the man whose hobby it is.

I have not seen "drainage tubes" employed in any other hospital than the Lariboisière. Chassaignac says that their use in the treatment of hydrocele is equal, if not superior, in practical advantages, to the ordinary method of iodine injection.

The surgical uses of the perchloride of iron.—In the treatment of *varices* this article is now extensively used, and it has also been employed for the rapid coagulation of the contents of aneurismal sacs. The strength of the solution used is that recognized in French Pharmacy as of the "thirtieth degree." (This is by weight, 16 parts of the salt to 84 of water.) *Weaker than this, the coagulating effect is lost*, and if used much stronger, it acts as a *dangerous caustic*. The solution should be made just before using, because if kept four or five days, it decomposes.

I witnessed an operation for the *radical cure of varices* by this method, at La Pitié. The veins on the lower limbs were markedly dilated and tortuous, certain of the dilatations along the course of the long saphena being as large as an ordinary thimble. In these larger dilatations, the quantity injected was five drops, thrown in as usual by the peculiar syringe used, by which every turn of a screw injects exactly half a drop, thus easily regulating the amount employed. In places where the varices were smaller, a less amount was used. Coagulation was almost instantaneous, and the ultimate result of the case very satisfactory.

In operating for varices by this method, it is necessary to compress the veins by a bandage on the cardiac side of the point of operation, as in ordinary cases of venesection. This has a doubly beneficial effect; first, by guarding against the risk of throwing such a dangerous solution into the general circulation; secondly, by causing the veins *to dilate well*, the clots are *larger*, and thus more thoroughly obstruct the circulation through the vein.

I saw the property that the perchloride of iron has of causing instantaneous coagulation put to a novel but very useful purpose by Maisonneuve. This surgeon, during the course of the removal of a cancerous tumor in the submaxillary region, finding that a continuous oozing from the capillaries and smaller blood vessels, was not only obstructing his view, but also weakening the patient, who was not in a condition to stand the hemorrhage, called for a solution of the article under consideration, with which he sponged the wound, with the effect of instantly controlling the hemorrhage.

The treatment of strictures by dividing from within—Maisonneuve's present method.—This winter, during my observation of the practice in Maisonneuve's "service," at La Pitié, there have been two cases of very "tight" strictures of the membranous urethra, treated by *internal section*. The *idea*, of course, is by no means *new*, but the peculiarities of the method of operation, and of the instruments employed by Maisonneuve, are well worth attention.

In both the cases which came under my immediate cognizance, the strictures were excessively constricted. The following are the brief details of the plan pursued: the patient lying in the usual position, an elastic capillary bougie was introduced, after some difficulty, through the stricture. This bougie was slightly tapering, having upon its greater end a metallic "ferrule." As soon as the stricture had been fairly passed, a small-sized silver instrument, looking like a nearly straight catheter, was screwed on to the metallic ferrule of the bougie, and then gradually introduced into the urethra, pushing the bougie before it, so that the latter curled itself up in the bladder, after having acted as a pioneer or guide for the silver instrument. The silver instrument having passed through, or *well into*, the stricture, is held steadily until a stylet sliding in a groove is passed down the catheter to the stricture, which it *partially* divides. The cutting instrument has an almond-shaped edge, which cuts from the *lower side* of the grooved canula, and *not* from its *end*, as *that* is obstructed by the insertion of the ferrule of the bougie. The stricture being now partially divided, the whole apparatus is then withdrawn, and another flexible bougie, which is generally *conical*, having the calibre of its main body considerably larger than the bougie first used, is then passed in the same manner as the preceding, and with about the same ease, owing to the already partially divided condition of the stricture. The *large* urethrotome is then screwed upon the bougie, as the other was in the first instance, and pushing, in the same manner, the bougie before it, enters the stricture. The urethrotome being passed sufficiently *through* the constriction, the concealed blade is opened, and the stricture divided completely. The urethrotome and bougie are then removed, and a large-sized steel sound readily introduced. The whole method strikes the eye as being preferable to Syme's operation of section from *without*, as it does away greatly with the danger of being followed by those distressing sequences, *urinary fistulæ*.

Unfortunately, one of the two cases that I have seen, where this operation was employed, was fatal; the other recovered. First and last, Maisonneuve has thus operated upon a considerable number of cases, but with results far less satisfactory than would be at first supposed. A highly intelligent interne attached to Maisonneuve's "service," informs me that the proportion of deaths is one out of every *four*, thus treated; and that, with the exception of arthritis and delirium, there are no well-marked symptoms before death. The soft parts in the vicinity are neither gangrenous nor unduly inflamed. The same medical gentleman gave it as his opinion, from the autopsies that he has made, that the cause of death is probably the direct absorption of urine into the tissues, acting as a poison. But it is difficult to realize that the small amount of urine thus absorbed would produce such a general poisoning effect, especially when the amount extravasated is not sufficient even to induce gangrene. The whole modus operandi of the poisonous agency is wrapped in obscurity, although I suspect that the unfavorable terminations are more or less assisted by the pernicious atmosphere of the hospital wards.

The instruments used by Maisonneuve are manufactured and sold by Charrière at the following prices:

Small Urethrotome, *with stylet*, complete . . .	10 francs.
Large " (opening like scissors) . .	30 "
Bougies (to fit the above) according to size, from 1¼ to 1½ '	

In connection with the foregoing subject is the method employed by the same surgeon to measure the distances between strictures where there are several. This is by introducing bougies of a small calibre completely through the strictures, each bougie terminating in a heart or olive-pointed head. Owing to the shape of this head it is readily *introduced*, but upon its withdrawal, at every stricture it "catches," thus giving an indication to the manipulator, who ties a string upon the free portion of the instrument whenever an obstruction is felt, the distances between the strings denoting the separation of the strictures. Of course, due regard must be had to the comparative extension of the penis at the time, and some fixed point for comparison be settled upon before hand.

The "electric cautery."—Among the novelties of the day, is the improved "electric cautery," by means of the "pile of Middledorf" containing six "elements of Bunsen." This beautiful and neat means of applying the actual cautery has been introduced in Paris within the past two months. The principles involved are not new, but the construction of the present apparatus unites the advantages of simplicity, portability, and ease of administration, combined with the perfect control that the operator has over the agent. The whole is contained in a box, say 22 inches × 10 × 12. It is furnished by Charrière, complete with all the instruments for cauterization, section of tumors, etc., for 350 francs (say $70). Charrière informs me that he expects to be able shortly to furnish the apparatus much cheaper, and also inclosed in smaller boxes.

The advantages of the "electric cautery" are double. In the first place, in general practice, the bad effect upon the minds of the patient and friends, to a great extent controls the application of the actual cautery as heretofore used, and in a manner hampers the will and desires of the medical practitioner. By using the *electric* apparatus the desired result can be obtained without shocking the non-professional observers by the horrible sight of "red-hot pokers," and such things; and the patient may frequently consent to be "burned by electricity," when the mere mention of the "fer rouge" would almost secure the dismissal of the enterprising practitioner recommending it.

The second good effect, in fact, a *real* advantage, is, that by using the present contrivance the amount of heat can be exactly regulated, and a "red" or a "white" heat generated and kept up at *will.*

Nélaton has recently used the "electric cautery" several times, at his cliniques, and expresses himself very much pleased with it.

The ordinary actual cautery is very much employed by Maisonneuve, and as equally eschewed by Nonat, in the treatment of ulcers of the os uteri and cervix. I saw the former apply the cautery in a case of schirrous disease of the same parts, but for what useful purpose, I am unable to imagine. Jobert, at the Hôtel Dieu, has a mania for treating not only ulcers of the os uteri, but also many other complaints, with this agent.

In those cases where the hot iron is applied directly to an ulcerated os uteri, the patients generally suffer but little pain from the burning of the *womb itself*, but they sometimes complain bitterly of the suffering induced by the *sides of the speculum* getting hot, and burning or smarting the *vagina*.

The injection of iodine into the knee-joint, as a cure for chronic synovitis.—This plan of treatment is not unfrequently adopted; but the most that can be said in its favor is, that some of the patients operated upon have recovered. The only case in which I have seen the method used, was that of a young woman who had suffered from chronic synovitis of the right knee for a long time. On the 25th of January, after drawing off the superabundant synovial fluid, Chassaignac threw an iodine injection into the cavity of the joint thus emptied. The operator in his remarks at the time, said that as the only danger to be feared was from excessive inflammation, the after treatment would be confined to such means as would more effectually keep down and prevent undue inflammatory action. In addition to ordinary antiphlogistic measures, he relied greatly upon keeping the parts in a state of absolute quiet. Accordingly he confined the limb to a sort of extemporaneous inclined plane.

I heard from the patient at the expiration of a week, at which time she was in a very fair condition—everything apparently going on as favorably as could be wished. She stated that after the first two days she suffered but little pain. I will watch the result, and report it hereafter, should I continue my Paris correspondence with the Journal.

The French surgeons advocating this treatment say that in thus treating chronic synovitis of the knee-joint, except where untoward symptoms supervene, the result is simply an alteration of the secreting condition of the synovial membrane, *without the production of adhesions*. They also say that the parallel treatment of hydrocele by iodine injection, is, in the majority of cases, *not* usually followed by adhesive inflammation, as is generally supposed, but simply by an altered condition of the secretive functions of the membrane.

Having thus given a rapid sketch of the principal novelties and "hobbies" at present in vogue in Paris surgical practice, I now leave the consideration of parallel matters in the practice of medicine proper, for a subsequent article. But before finishing the present paper, I feel constrained to make a few general observations on matters not properly embraced under its heading.

In the first place, a medical man, in viewing the systems and practice of foreign countries, necessarily compares what he there sees with what he has been in the habit of seeing at home: this has been my own case, and I hope that it will not be considered presumption if I recount a few of the things that most astonish me.

Foremost among these are the wretchedly ventilated wards of the principal Parisian hospitals, with the marked and only exceptions of the Lariboisière and Beaujon. The close, almost suffocating, wards of the Hôtel Dieu, Charité, La Pitié, and the "Faculté" are a standing reproach to this nation, believing itself and boasting that it is at the head in medicine as well as in the other sciences. Even the Lariboisière itself is not, in my opinion, nearly as well ventilated or arranged as the New York Hospital, or several other kindred institutions in America. With the two exceptions mentioned, the hospitals of Paris are deficient in respect to ventilation, to an appalling extent. This readily accounts for the vast amount of erysipelas, phlebitis, etc.—these incubi upon Parisian surgery—which continually exist.

But there are other points which attract attention and which are at variance with most of our preconceived ideas. Wounds are enveloped in thick coverings of picked lint, compressed, etc., and appear to be thus kept *too warm;* at the same time but little care is taken to keep them *clean.* Cold water dressings are very rarely employed, and in some of the hospitals seem to be entirely eschewed. Evaporating lotions I have seen used but once! Several times I have noticed an eminent surgeon, while dressing an ulcerated surface, apply the sponge directly upon the *granulations;* yet he takes but little pains to wash or keep the skin *adjacent* to the discharging sores clean. This being generally covered with the dried, stinking decomposing secretions of the ulcers, is foul and disgusting.

The practice of keeping stinking wounds muffled in thick dressings, and under warm bed-clothes, does not strike me as consistent with good surgery, and when combined with the bad ventilation of the wards themselves, already alluded to, must exert a very unfavorable influence upon the patients, and, to a certain extent, accounts for the frightful mortality which it is well known exists in the French hospitals.

In hospital practice, simple cerate is the most frequent ointment employed. It is much the same as that used by us, except that the wax entering its composition, is the *unbleached*, yellow kind, used, I suppose, because it is cheaper—as the druggist shops generally supply the *white* cerate. It is also more fluid than with us, which allows its use for lubricating bougies, and other instruments, and the hands for vaginal examinations. It is commonly employed for these purposes, and has the advantage over plain olive oil of not *dripping*, thus saving the bed-clothes, carpets, etc.

The treatment of fractured bones at present in Paris, is worthy of the days of the enlightened " Frère Jacques," and a disgrace to the present French surgeons. I have scarcely seen a single case of fracture, especially of one of the long bones, that has not united with positive deformity, much of which might have been prevented by the proper application of *common sense.* There is scarcely a second-rate surgeon in the United States that would not blush to turn such " cures " from his hands, and at the delightful prospect of a civil suit for maltreatment. To enlarge upon this subject will occupy more room than can be spared; suffice it to say, that I am, in the above statement, echoing the views of every American student with whom I have conversed upon the subject.*

The use of anæsthetics.—Ether does not seem to be used at all, chloroform being solely relied upon. This latter article is almost invariably badly administered, even by Nélaton, who is considered by many to be the ablest and most complete surgeon in Paris. Fear of the evil consequences of chloroform causes the surgeons to be so cautious and timid in its administration, that the majority of the patients operated upon are but partially placed in a state of anæsthesia, and almost invariably during the course of an operation, the violent shrieks or struggles of the victim show that the consciousness of pain is scarcely diminished, while the intoxicating effect of the vapor destroys for the time his reasoning faculties, and frequently renders him very unmanageable. No indication is fulfilled by thus using the article, and it seems to me that rather than *half* use it, it had better be dispensed with entirely.

Chassaignac, who alone among the Parisian surgeons appears to have studied the modus operandi of chloroform, regulated its application with a great deal of nicety and discrimination—guiding himself by carefully watching the pulse and respiration. His patients rarely make a disturbance during the operation, and for the most part seem thoroughly unconscious of pain. After an operation in which the anæsthetic has been used, the last mentioned surgeon is very particular to have the patient carried back to the ward, with the *feet elevated* and the *head down*. He fancies that the circulation in the brain is thus better kept up. The old man, despite his "hobbies," seems to be a very sensible, clear-minded surgeon, and an enthusiast in his profession. His lectures, interesting and practical, are delivered in such clear and measured accents, that his clinique is quite a favorite with English and American students.

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* A friend walking through a ward of one of the large hospitals, saw a case of rather recent fracture of the thigh. The only treatment pursued was to order the man to lie flat on his back. A turn or so of a bandage was made around the foot, and then the ends pinned to the corner of the bed. This was the only substitute for extension, counter-extension, and the other means for fulfilling the idea still in vogue in America, but apparently obsolete in France, of keeping fractured bones in apposition.

Among the operations of more or less interest, lately performed in Paris, besides those already mentioned, are the following:

By Maisonneuve at La Pitié.—Operation for fistula *in ano* with the view to complete cure. In this case the sides of the fistulous track were "scooped out" with the knife, the sphincter having been first divided.

Operation in December of "resection" [exsection] of the head of the femur. This was in the case of a young woman suffering from morbus coxarius. The patient—two months having elapsed—is doing well, although much reduced by suppuration and long confinement. January 22d. Operation to produce an artificial anus at the bottom of the descending colon. This was in the case of a patient suffering from complete malignant stricture of the rectum. The operation will certainly prolong the days of the wretched creature a little longer, and has given him great temporary relief, as the symptoms produced by the accumulated fæces were distressing and threatening.

The same surgeon has lately operated on a woman for femoral hernia. The strangulation was of eight days' standing, and, as a consequence, gangrene had completely taken place. The operation consisted simply in laying open the mass by a free incision. Maisonneuve's plan of treating strangulated irreducible herniæ are rather peculiar. If the strangulation has existed under forty hours he operates in the usual manner, and reduces the gut; but if it has lasted over that time, he does nothing until the seventh or eighth day, at which time he simply makes the incision as in the case given. An artificial anus, the result, he considers far preferable to the risk of general peritonitis should the gut be returned too early. He also waits, as we have seen, for a sufficient time to allow the firm adhesion of the gut at the point of departure, which otherwise would perhaps be drawn in by peristaltic action.

Maisonneuve is very partial to a method of removing malignant tumors in the submaxillary and carotid regions, by caustic. His method is to use "*flèches*" of the paste of canquoin (composed of chloride of zinc and wheat flour paste). These "*flèches*" are simply pegs the composition of which kiln-dried becomes quite hard; tapering to a sharp point at one end, their bases are from two to three lines square, and their length varying from one to one and a half inches. In action they are analogous to the common "trochisques" of corros. sublimate. When the "*pâté de canquoin*" is required simply for an external application, it is made of equal parts of the dough and the chloride, but in making the "*flèches*" two parts of flour paste are necessary to one of the salt; this is in order to secure the proper hardness and firmness when dry. After being dried, they should be kept in a closely stoppered bottle.

To remove a tumor with the "*flèches*," they should be introduced into small lancet holes (through the integument), situated about half an inch apart around the circumference of the tumor. They should then be pushed obliquely backwards and inwards their entire length, their points converging towards a common centre. The caustic thus applied acts very effectually, but operating for a period of days subjects the patient to long continued suffering. If the whole of the tumor is not removed at first, fresh fleches are introduced in the same manner. Should the tumor be large, the cavity after its removal is appalling. Several of the cases that I have seen undergoing this treatment have been attacked by erysipelas, and one was fatal. The cause of death in this case was a hemorrhage of one of the branches of the external carotid occurring in a patient already much enfeebled by suppuration and long suffering.

The advantages which Maisonneuve thinks justify the removal of cancers by this method, are that they can be thus destroyed in places where the intricate relations with large blood vessels and nerves render attempts to "dig" them out with a knife hazardous, and unsatisfactory. As opposed to the foregoing, we find that the constitutional and *real* suffering during the action of the caustic is very great—severe hemorrhages *sometimes* take place, and erysipelas, facial paralysis, and other complications frequently occur. Should not these facts deter the conscientious surgeon from resorting to such means, especially when the chances of ultimate benefit to the patient are so remote, even though the tumor be successfully removed the first time?

At the Hôtel Dieu there have been but few operations during the winter. It has suffered much from erysipelas, typhoid fever, and kindred disorders. The only operations of especial interest have been one or two attempts at curing vesico-vaginal fistula. These cases are a hobby with Jobert, who relies entirely upon the use of the interrupted suture. His other hobby is to use the actual cautery upon nearly everything, He has upon his "public days" two furnaces filled with red hot irons, which he uses with an unflinching hand for the benefit of suffering humanity, and the edification of the students following him.

At the Charité there has also been a great dearth of interesting surgical cases during the winter. Velpeau gives his ordinary tri-weekly clinical lectures as usual, to a very limited number of students.

Nélaton at the Hospital of the Faculty, is the great attraction to surgical students. With a happy faculty of explaining himself clearly, combined with a thorough understanding of his subject, he unites the common sense of a good practitioner and the cultivated manners of a gentleman.

His lecture-room is crowded daily, many students being obliged to stand throughout the lecture. During the past winter he has performed several interesting operations, removing tumors, etc. I saw him take out a diseased testicle very neatly. After the incision through the scrotum and tunica vaginalis with a scalpel, he finishes the operation with *scissors*. This is his ordinary plan, cutting the cord little by little, and tying each bleeding vessel as it is divided. Among many practical remarks which continually enrich his lectures was one that struck me as well worth recording. He said that it is his rule never to attempt to put a *lateral* ligature upon the internal jugular, for the reason that nearly, if not quite, always the included portion at the end of four five days *sloughs out*, *leaving a larger hole than the first wound*, from which the sudden bursting out of a violent hemorrhage speedily proves fatal.

In the present article I have endeavored, in an impartial manner, to present the facts as they stand, for the most part leaving its readers to draw their own conclusions concerning the efficacy and value of the different methods spoken of that are now in vogue in Paris, compared with those that they are familiar with at home.

PARIS, *February 7th*, 1858.

Art. IV.—*Invagination of the Colon Descendens in an Infant, with repeated hemorrhage in the Colon Transversum.* By A. Jacobi, M.D., Physician to the Children's Department of the German (Canal street) Dispensary of the City of New York.

Invagination of the intestines, from a merely anatomical point of view, is not a rare occurrence. Before and in the moment of death, the paralysis of the muscular tissue of the intestines progressing by degrees and sometimes unproportionally, invaginations of the jejunum and ileum are very frequent; indeed, so much so, as to be a very common result of a great many post-mortem examinations. The same alteration in the living is not of the same frequency, but wherever it occurs, it is generally known to be a dangerous disease. It happens, in almost all the cases, in the jejunum and ileum, the intestina crassa being as it were exempt. The reason why this is so, is: 1st, the vast development and considerable strength of the muscular fibres of the intestina crassa; and 2d, their firm adhesion in the fossa iliaca. Now, in very young children, neither of these things are found; in them the muscular tissue of the colon is not very much developed, nor are there strong adhesions in the fossa iliaca. Therefore it is only natural, that there should be, in infants, cases of invagination of the intestina crassa, so very unusual in older children or in adults. Nevertheless there are not many observations of such cases, and the literature of the subject is very poor, so much so, that a number of even the best manuals on diseases of children do not mention it. For this reason the profession is under the greatest obligation to Rilliet, who collected more than a dozen of well authenticated cases, and described the disease in so masterly a manner as only Rilliet and Barthez are able to do. And for the same reason I think it important to relate the following case of invagination of the colon descendens, with its peculiar complication with enterorrhagia, in order to establish if possible the exact diagnosis of this dangerous disease by comparison.

Case.—J. D. a robust and vigorous boy of seven and a half months of age, was always lively and healthy from his birth. The only trouble, for which now and then medical advice was procured, were slight broncho-catarrhs; and the only thing remarkable in the external appearance of the child (being apparently brisk and healthy), was an uncommon paleness of the skin. Being exclusively nourished by breastmilk, he never once suffered from disorders of digestion, not even at the time, when the first two lower incisors made their appearance. No particular alteration in the state of his general health was perceived up to the 1st of March, 1857, on which day, towards evening, the child began to grow restless and troublesome, crying all night and seeming to be feverish. This symptom being the only one to be perceived, it was not much thought of, particularly when the child, towards morning of March 2d, fell asleep and rested for some hours. About 9 A.M., the same day, he had an evacuation of the usual quality, after which he again slept; three hours later, about noon, he had another evacuation, with much pressing and straining, no fæces coming from him, but only some serous fluid mixed with a little blood, of red color. This symptom causing some alarm, I was sent for, and found, at 2 o'clock P.M., the following *status præsens:* Last normal evacuation at 9 o'clock A.M., first bloody one at 12, second bloody one at 1 P.M., of just the same quality as the first, with only a sign of fæces. The child is pale, but not more so than usual; looks uneasy, without having a particularly timid or anxious expression; cries aloud, in a fierce and abrupt manner from time to time, as from colic; the temperature of the surface in general, and of the head and extremities in particular, is normal. The abdomen is soft to the touch; there is nowhere a swelling to be felt; no pain effected by pressing; percussion yields the common tympanitic sound. Pulse 100, somewhat small, but rhythmical. The child has not taken any food for the last four or five hours, and has not vomited. My diagnosis, after the foregoing symptoms and results of examination, being hemorrhage of the intestinum crassum, I prescribed some calomel; my prognosis being sufficiently favorable.

March 3, 9 *o'clock* A.M. The child is much changed for the worse; he is paler than ever, cheeks hollow, eyes sunk in the orbits; he looks timid, anxious, restless; cries often, but in a lower and more languid voice, and his extremities move in a much less violent manner than yesterday. Nevertheless, there is no change in the general appearance of the patient, skin and circumference of the extremities have not lost their former appearance, and the *embonpoint* does not seem to be diminished. Abdomen is soft to the touch, and without pain, when pressed, neither inflated, nor sunk. Only there is, in the left inguinal region, immediately above the S Romanum, a swelling offering some resistance to the finger of a longitudinal form, of about one and a half inches, and a lateral width of about one inch, which could not be discovered there, positively, the preceding day. Nowhere in the colon could another pathological alteration be found, particularly not in the ileo-cœcal region. No fæces have been evacuated since yesterday, but there have been from twelve to fourteen passages consisting each of a drachm or two of serous fluid, some three or four of them being colored with hæmatine; all of them being accompanied by painful straining and pressing. The child began last night to throw up everything he swallowed pretty soon after having taken it, and continued vomiting, for ten or twelve times, through both the night and the following morning, bringing up nothing but some mucus and bile. Always, after the child threw up, or evacuated his bowels, he seemed more languid, anxious, and nervous, his nervousness increasing in proportion to his weakness. He does not seem to be very desirous of drinking. His tongue is moist, slightly covered with some white mucus. Pulse 120, very small, but rhythmical.—*Diagnosis*: Invagination of the lower part of the colon descendens.—The treatment consisted in the immediate and repeated injection of warm water, in order to relieve, if possible, the obstruction of the intestine by pressing the invaginated piece out of the lumen of the bowel. Every effort proved unsuccessful. The insufflation of the bowels, for the same purpose, was resorted to, and continued for a long while, with no better success. Both the injected water and air returned from the rectum at the moment the injections were being made; the intestine filling with water or being inflated with air exactly as far up as to the place where the swelling could be felt in the left inguinal region. Only once did I believe that a small stream of air passed the invaginated bowel. It has been observed in many cases of invagination, that some gas escaped through the obstruction. I then left the child, who was to have a warm bath and some doses of Hydrarg. mur. and extr. hyosci.

4 *o'clock* P.M.—There is no material change. The child looks, if possible, more anxious, with a particular expression of his features, sometimes of nervous excitement, sometimes of total depression; temperature of the head and extremities normal; thirst increasing, pulse 130, small, contracted but regular. Patient vomited frequently since the forenoon, from twelve to fifteen times, and had about the same number of evacuations, which were even less bloody than the preceding ones; almost wholly consisting of a serous fluid. I think the amount of blood excreted in all the passages for the last two days, did not exceed one drachm. The same treatment as before was resorted to, but proved just as unsuccessful.

10 *o'clock* P.M.—I saw the patient, in consultation with Dr. H., who recommended ol. crot. in large doses, in order to have the obstruction removed at all events. Besides, injections of warm water and air were resorted to again and again, but all our efforts proved wholly ineffectual in overcoming the obstacle. The patient was in about the same condition he was in the afternoon, only more depressed in his strength, his motions being slower and sometimes as it were tired, and his voice sounding duller and lower than before. The eyes deeply sunk in the orbits; the cheeks hollow; pulse 136, smaller, but always regular. Vomiting occurred only four or five times since the afternoon; bowels evacuated about as many times of serous and mucous fluid, without blood. *Fecal matter* appeared in neither of them; *no sign of it was ever brought up by vomiting;* only once there was a slight tinge of greenish color in

the passage, which I felt at first inclined to consider as produced by the repeated doses of Hydrargyrum.

March 4th, 9 o'clock A.M.—*No more vomiting has occurred since last night*, but the bowels excreted some five or six times the same serous fluid, which had, this time, the smell of blood serum undergoing dissolution. The child is sinking rapidly (although the body does not lose very much), and is anxiously looking around for help; the pulse is becoming smaller and weaker, 140; thirst increasing. The general condition of the patient remained the same during the day, the treatment being, as above described, repeated several times without giving the least relief. *No more vomiting.*

March 5th.—The last day did not bring any particular change in the course of the disease. *No vomiting occurred*, nor were evacuations of the bowels so frequent as on the previous days, nor was there blood contained in them. Hands, feet, legs, became cold, pulse 150, 160, small, contracted, at last scarcely to be felt. No loud crying was any more possible, only a whimpering heard from time to time. All the while the *abdomen was painless*, only a very little tympanitic. The eyes were so much sunk into the orbits and the cheeks had become so hollow that it would have been impossible to recognize the child. During all the periods of the disease, the little patient was *conscious of himself* and an anxious observer of what was going on around him: looking around for help as if knowing that every one was engaged in trying to relieve him; sometimes depressed by his rapidly increasing weakness, sometimes disturbed by a sudden nervous excitement, sometimes troubled by the often repeated excretion of some drops of serous fluid from the bowels. Finally, conscious almost to the last quarter of an hour, the patient finished his four days, dying shortly before midnight.

Post mortem examination, March 6th, 10 *o'clock* A.M.—Only the examination of the abdomen was allowed. Rigor mortis. No unusual number of hypostatic spots on the back of the corpse. *A great difference is perceptible between the general appearance of the face and the other parts of the body;* the face being extremely thin, the eyes deeply sunk in the orbits, and the subcutaneous fat of the cheeks gone, the rest of the body pretty nearly retaining its usual and normal roundness and fullness. The abdomen is not very much inflated with gas; percussion yields a tympanitic sound; to the touch it is equally soft on all parts, only a slight swelling as described above, among the symptoms of the disease, in the left inguinal region. After the integuments were opened, the following appearance presented itself: Stomach normal, without contents: the jejunum and ileum moderately inflated with gas, very few contents in them. The colon ascendens normal, the ileo-cœcal valve shows nothing particular. The flexion between colon transversum and descendens not so manifest as it ought to be, being more a spherical curvature than a right angle. In the lower part of the colon descendens just above the S Romanum, a piece of the intestine has dropped or is introduced into the next lower one, constituting a simple invagination of the colon, which was probably prevented by the S Romanum from growing larger than it is found to be. As usual in such cases, there is no difficulty in removing the invagination and bringing the several parts into their normal proportion. On the upper flexion of the intestine, where the invagination is beginning, there is a manifest hyperæmia, on the lower flexion; inside the invagination, there is extravasation of blood between the membranes.

The colon transversum shows the following remarkable appearance: In its middle part, hanging down from the upper wall, there is a purely *fibrinous coagulation* of a diameter of somewhat more than a third of an inch and two inches long, *between the serous and the mucous membranes of the intestine*, the muscular tissue being wholly destroyed; the whole offering the clear signs of an extravasation having occurred long ago, of which nothing was left except the fibrine. Next to it there is *another fibrinous coagulum* of the same size and quality, with the exception, that it appears, from some pieces of coagulated blood being still attached to it, and from its not being so hard and dense, *somewhat less old than the former one. Third*, there is a coagulation, not fibrinous, but really bloody, of fresh appearance, but firm and dense. The mucous membrane, *which had been extended* by the two former hemorrhages, of which the fibrinous coagulations have remained, has been *broken and lacerated by the third one.* This last coagulation *obstructs entirely the lumen of the colon*, its walls being extended by and closely adhering to the fibrinous and bloody contents. It is evident, that the last extravasation was sufficient to shut the colon up, after it had become more and more narrow, without injury to its functions, by its former local hemorrhages.

The results of this post-mortem examination do not fully agree with those which Rilliet tells us are found in the majority of cases. In most of them the invagination was of a larger size, because in another part of the intestine. They mostly occurred in the colon ascendens, and, there being no hindrance to their further development, enlarged to such a size, as to implicate, sometimes, the whole colon between the ileo-cœcal valve and the S Romanum, in such a manner, that the flexions of the colon had wholly disappeared and the ileum seemed as it were to immerge directly in the rectum or the lower end of the *colon descendens.*

From this the positive statement by F. Rilliet (E. Barthez and F. Rilliet: *Manual of the Diseases of Children*, vol. 1, chap. xiii., art. 1), that in no age whatever can an invagination occur without the lower end of the ileum being the guide of the invaginated bundle, is evidently not in conformity with the facts, and is a premature exaggeration.

The invaginated portion, in the majority of Rilliet's cases had a dark red color, particularly the serous membrane; the mucous membrane participating in the inflammation and congestion and covered with dark blood and mucus. In one case there was only a limited hyperæmia and extravasation, although fully corresponding with the small extent of the invagination, the enlargement of which was apparently kept back by the normal impediment given by the *flexura iliaca.* It is generally stated, that in many cases an invagination of even a considerable extent cannot be felt during life; so much the more remarkable is the case above described, in which the anomaly, although small, was discernible by the touch soon after its occurrence.

A highly interesting feature in the whole number of facts resulting from the post-mortem examination, and not even thought of during the life of the patient, is the condition of the colon transversum. From the quality of the coagulations between the intestinal membranes, it is impossible to consider them as fresh productions; besides, no opening of a bloodvessel could be found, by which the hemorrhage could have taken place; weeks must have elapsed, since, *at different times, fibrinous coagulations were deposited.* The *last hemorrhage was a fresh one,* since it obstructed the whole lumen of the bowel and was able to lead, by itself alone, to death. It is not the least interesting fact, amongst all the foregoing ones, that the extravasated blood *coagulated so rapidly, as not to allow a drop or even the color of blood to escape into the intestine between the place of hemorrhage and the invagination,* not to speak of the small quantity of blood excreted by the passages, after the *invagination had occurred.*

As to the symptomatic importance of either the obstruction by hemorrhage and the occlusion by invagination, there can be no doubt, in my opinion. I do not hesitate to say, that the symptoms of either of these anomalies, during life, must and would have been the same, if only one of them had occurred; for the general effect of either of them, as well on the lumen and function of the intestine as on the whole system must be equally destructive. Of some diagnostic importance is the fact, that, although the coagulations in the colon transversum were firm, solid, and as large as I have described, at all events a great deal larger and more solid than the invaginated part of the colon descendens, this one was soon discovered, while the former one could not be found, neither by repeated palpation nor percussion; this is a fact, which corresponds with Rilliet's remarks on the *difficulty of finding, sometimes, even large and solid invaginations in the living subject.* The question arises, which of the two, the invagination, or the obstruction of the colon by hemorrhage, occurred first. In my opinion there can be no absolute certainty about the answer; but the following remarks may, perhaps, be thought sufficient to elucidate the subject. It is a fact, that two local hemorrhages occurred a long time before the invagination took place, and on the same spot, where the third and last one was to occur later; I do not feel enabled to say, whether there was a local predisposition to hemorrhage in only one blood-vessel, it being too large or too thin, or abnormal in some other way; or if there was a general disposition, in all the internal organs of the child, to hemorrhage, which resulted, perhaps, from a comparative hyperæmia of the abdominal organs, corresponding with the continual paleness of the child, while robust and healthy. A further fact is this, that the invagination occurred *below* the bloody obstruction of the intestine, and it is highly probable, that after the hemorrhage occurred, the muscular motion below it would have been, if not stopped entirely, at least diminished. If, on the contrary, the invagination had taken place above the hemorrhage, there would be more probability of the former having been produced by the increase of the anti-peristaltic movement of the intestine. As the facts are, I am rather disposed to say, that the *invagination was the primary abnormity*, and the cause of the small quantity of bloody discharge excreted through the anus; and that the hemorrhage, to which a predisposition was clearly present and cannot be well denied, ensued as soon as a strong anti-peristaltic motion of the muscular tissue of the intestine set in. There are, then, two different causes of death, both almost equally dangerous, both likely, with the same symptoms in the living subject. Finally, I have no doubt, that had no invagination occurred, probably the third hemorrhage would have occurred a short time afterwards, and led to certain death, under the same or similar symptoms as the ones related.

As to the symptoms of the case reported, I have only a few remarks to make, as the symptomatology given by Rilliet is most complete and able. His description fully corresponds with what I had occasion to relate. The only facts which, in my case, seem to be worthy of particular attention are these: that, first, the thirst of the child, which has been said to be usually not extraordinary, kept increasing in proportion to the duration, and to the approximation of the fatal end of the disease; and second, that vomiting, never bringing up fæcal matter, in opposition to what is always observed in cases of invagination in adults, stopped full two days before death, although the post-mortem examination did not give the least evidence of mortification, or even inflammation.

56 Amity street.

Art. V.—*Malaria and its Sources in the Valley of the Sacramento.* By F. W. Hatch M.D., of Sacramento, California.

The climatology of different portions of California has been so fully treated of at different times and by different observers, during the last three or four years, together with its relations to the health of the community embraced within the regions reviewed, that it has, perhaps, ceased to be regarded as a novelty, and to the general reader, at least, has become divested of much of its former interest. To the professional inquirer, however, whatever relates to the medical history of a comparatively recently settled portion of our country, can never so far lose its attractiveness, as to be unworthy of consideration and comment.

This is especially true of the sanitary relations of the climate of California, presenting, as they do, many features of prominent and peculiar interest. Most of the treatises upon this subject, emanating from medical gentlemen resident within the State and, therefore, familar with its characteristics, have, thus far, been almost entirely of local reference, and even these appear to have been not altogether exempt from discrepancy.

The writer of the following pages, on two previous occasions, presented to the profession, through the columns of the *N. Y. Journal of Medicine*, a few brief and very general remarks upon the climate and medical features of the valley of the Sacramento. Without being designed to present more than a cursory review of the subject, the articles alluded to were drawn up, mainly, from materials collected by himself, and as the result of observation since the latter part of the year 1851.

It is not designed, at the present time, to enter with minute detail upon the consideration of the reflections then advanced. The meteorological statistics given in the July number of the Journal for 1855, were collected from a careful and, it is believed, accurate series of observations made during the period they embraced, and from further and continued observation, he has seen no good reason, however much they may differ from the results of other observers in the same locality, to modify or amend them.

The purpose of the present article is to examine with rather more of detail than has hitherto been attempted, a class of diseases believed to be of frequent prevalence in some sections of the State, and particularly in the valley of the Sacramento. We are induced to this attempt, not with a view to the propagation of any new facts or theoretical conceptions upon the class of diseases referred to, but by the desire to correct what appears to be a misapprehension on the part of some as to their occurrence and causes in this and other localities in California.

In a recent extensive and highly interesting work on the "*Climatology of the United States*," by Lorin Blodget, some doubt is expressed as to the prevalence of malarial fevers in this locality, and of their origination, when occurring from miasmatic sources. This view of the subject is based, probably, not so much on a personal experience in the climate and of the existing local causes of disease, as upon theoretical deductions drawn from the meteorological history of the climate, and the conditions generally recognized as being necessary for the generation of malaria. It seems also to have been sustained by an article published in the *N. Y. Journal of Medicine* for March, 1854, on the "*ultimate causes of malarial diseases*," by Doctor Black, who is referred to as "insisting that the 'uncommon prevalence of intermittents in the auriferous regions of California,' tends to prove the hypothesis attributing malarious diseases to the conjunction of heat, moisture, and vegetable decomposition, almost wholly untenable."

The above quotation from the paper of Dr. Black is placed in direct antagonism to a previous one from an article written by myself, of which it is said, that in speaking of the "climate of California," the "prevailing constitution of the atmosphere," is characterized as being "malarious."

It is but just to observe, before entering upon a review of the subject before us, that the article in question purported to relate solely to the climate and some of the more prevalent diseases of the *Valley of the Sacramento*, and should not have been applied to any other portion of the State. It is a truth, to which any one in the least familiar with the topographical features of the State will subscribe, that the climate of the *interior* differs as much in its several sections, as does any portion of it from that of the coast region. The medical history of the Sacramento Valley is not much more analogous to that of the auriferous region generally, and the mountainous ranges of

North and East, than is that of either of these to the region of San Francisco. The writer of the article in question was not a little surprised, therefore, when he found himself made to convey an impression of the climate and medical features of the State at large, when the obvious interpretation of his observations could have embraced only a limited portion. To have said that "the prevailing constitution of the atmosphere" *of California* "is malarious," would have been untrue; while the remark as applied to the valley then under review, was, it is believed, strictly in accordance with medical experience and careful observation.

Thus much by way of explanation.

It would be foreign to our purpose to attempt a lengthened dissertation upon the nature and causes of malaria, or marsh miasma, or its agency in the production of periodical fevers. The connection between them as cause and effect, is so well settled in the conviction of most medical men of the present day, as not to be easily disturbed by any antagonistic theory: nor would we allude to the subject, but for a remark in the work previously referred to, which seems to seek support for the theory of the climatological distribution of disease, by attributing the opinions of the existence of malarious influences in California to an error in pathology. "The climate of California, by a singular contradiction which probably has its explanation in pathology simply, is reported to develop decided malarious influences over even its most arid surface, and at seasons almost absolutely destitute of atmospheric or surface humidity."

That such development, even from an "arid surface," is not impossible, we believe might be fully demonstrated by facts related by some of the most reliable medical observers; but to establish the fact of the generation of such an atmospheric poison in many parts of California, and especially in the valley of the Sacramento, this extreme supposition is by no means necessary.

In our previous articles upon the features of this valley, a general allusion was made to the existence over a great extent of country, of *tule* lands, and the fact of their almost annual inundation was fully explained. The precise extent of these low and overflowed lands, it is difficult accurately to determine, nor is this necessary for the proper appreciation of their influence. Their location in situations favorable for the diffusion of their deleterious emanations, the duration of their submergence under water, the extension of their period of drying more or less into the warm seasons, and their consequent exposure to the hot sun of the early summer, and the vast amount of vegetable decomposition which ensues, are the most important points we have to consider.

The geological formation of the valley is of some interest in this connection, and we extract the following from the remarks of the Surveyor General of the State, in his report for 1856. "No one," Dr. Brewster says, "who has given care to the investigation of the subject can doubt, that the whole of the valley watered by the Sacramento and San Joaquin rivers, was submerged at some remote period of the world's history, and that the delta at their mouths, and the vast body of swamp lands on either side of their present channels, were formed by accretions of matter swept down from the more primitive formations above and deposited below. * * "The natural action of the waters, by bringing down the heavier particles and gradually depositing them on the edge of the current, has created the natural levees on these streams, increasing at every overflow, until now the land on the bank of the river is higher than at the right angles back." * * * "In the basin formed by the natural levee of the streams and the high grounds in the rear, lie these vast bodies of swamp lands. The original body of water contained in them, is constantly fed by the annual overflows, the back water of the sloughs connecting with the rivers, the fresh water streams which flow into the tules, and the constant absorption through the porous soil."

The Sacramento River, it should be observed, pursues a somewhat southeasterly course from the head of the valley in the north, to the affluence of the stream in Suisun Bay, a distance of 200, or more, miles. Winding its way, for a large part of its course, through a low and level region, in the centre of a rich and fertile valley, its banks in many places closely skirted with underbrush and an exuberant vegetation, on each return of the rainy season it is, for a great distance, swollen above the surrounding country, and spreads more or less over either side. Moreover, the accumulating waters of the Yuba, Feather, and Upper Sacramento, being concentrated at the mouth of the Feather, and being unable together to find an outlet in the channel of the Sacramento, spread over the adjoining country and empty finally in Suisun Bay. Much of the water thus thrown upon the valley, even in locations not subject to the growth of Tulares and in a state highly favorable for cultivation, owing to the fact of the immediate river banks being higher than the surrounding country, is compelled to await the slow and gradual process of absorption and evaporation. In many seasons, it is not until late in the spring—sometimes as late as June, or even in July—that the soil has become fully exposed; nor is it entirely destitute of even surface moisture until much later.

In the Tule lands, the case is yet more extreme, many of these being still covered over a large extent of surface as late as July, and frequently August. Even at this late period, already the season of high temperature, although the travelled and beaten track may be passable, or even quite dry, the surface of the ground covered by the Tulares, or thick growth of rushes, is saturated with moisture. Indeed, it is a fact of which we are fully assured, that the soil in these localities is seldom perfectly dried after a severe wet season, to a greater depth than a few inches. It is, therefore, in a condition of the highest adaptation to the evolution of miasmatic effluvia under the action of a burning sun.

That this exhalation does take place very late in the summer, is sufficiently evident to those who are in the habit of frequently crossing them during the evening or early morning. That the chain of circumstancces which we have briefly related could occur without the decomposition of a vast amount of vegetable material and the generation of miasma, would seem to be impossible. Every condition generally recognized as essential to the process is here prominently exhibited—a supply of material, a sufficiency of moisture and a hot sun—and all this, "at seasons almost absolutely destitute of atmospheric humidity."

The diffusion of the malarial emanations, if any exist, of the tule, and other overflowed lands already described, is readily accomplished by the atmospheric currents prevailing at the favorable season of the year, in this section of the State. By reference to a former article upon this subject, it will be seen that the ordinary course of the wind, in the summer season, is south or southeast, a direction peculiarly favorable for bringing over the neighborhood of Sacramento, the miasmatic exhalations of the extensive low lands south of the city. Indeed, were not this the fact, it is scarcely conceivable, that a wind from almost any direction could fail to bear upon its wings, and spread along its course, a large amount of the exhalation of decomposition. This is especially clear, when it is considered that almost the entire valley is one uninterrupted plain, with no hills to interfere, or thick forests to intercept its easy diffusion. If then, the correctness of the foregoing facts be admitted, and we suppose no one at all familiar with the topographical features of the valley will dispute them, we can scarcely avoid the admission of the prevalent existence of malarial sources and its rapid generation, nor escape the conviction of their true connection with the remittent and intermittent fevers, of various types, which exist—unless, indeed, we take refuge under the uncertain protection of a different and entirely unsatisfactory "pathology."

It is but just to admit, however, that periodical diseases are more or less prevalent in sections of the valley where the concurrence of the three conditions just enumerated, are not as well marked as has been stated to be the case elsewhere, and in by far the greater portion. In some localities, the immediate source of the disease is acknowledged to be so obscure as not unfrequently to call to mind the much disputed calculations upon the distance to which malarial exhalations may be conveyed. It is undoubtedly true, that many of the terrestrial and atmospherical conditions which generate malaria are involved in much obscurity. It is by no means certain that *marsh* miasmata are alone concerned in the production of periodic fevers, and it is not improbable, as has been suggested by medical writers on the subject, that a morbific agent arising from the soil without the concurrent existence of marshes, may induce a similar train of consequences. To various descriptions of soil has been attributed an influence of the same kind, and it is believed by many, that the alkali soil of many sections of California is especially liable to engender a predisposition to the disease even in localities but feebly tainted with positive marsh miasmata. Whether this be true, we have no data sufficient for a satisfactory determination. It is a hypothesis which needs confirmation.

Perhaps few recorded facts are more pertinent to the subject, in its bearing upon the peculiar conditions existing in some portions of this valley, and more forcibly, to other parts of California, characterized by the prevalence of periodical fevers, than those derived from the researches of Dr. Ferguson. The generation of malaria in a soil of excessive dryness, concurrent with high climatic temperature, is forcibly illustrated by the account given by this accurate observer, of the retreat of the British Army into the plains of Estremadura.

"The army," says Dr. Ferguson, "advanced into Talavera, through a very dry country, and in the hottest weather fought that celebrated battle which was followed by a retreat into the plains of Estremadura, along the course of the Guadiana River, at a time when the country was so arid and dry for want of rain, that the Guadiana itself, and all the smaller streams, had in fact ceased to be streams, and were no more than lines of detached pools in the courses which had formerly been rivers; and there they suffered from remittent fevers of such destructive malignity that the enemy and all Europe believed that the British army was extirpated. In all the subsequent campaigns of the Peninsula, the same results uniformly followed whenever, during the hot season, any portions of the army was obliged to occupy the arid encampments of the level country."

A not dissimilar character belongs to a portion of the Valley of the Sacramento some fifteen or eighteen miles northwest of the city of Sacramento. The low depressed basin of what is called the "Laguna de Santos Calle," for months during and subsequent to a rainy season, is covered to a greater or less extent with water, and it is not until late in the summer, that the stream is in any portion dry. Even during the whole summer, however, detached basins or pools of water remain exposed, while here and there, between these, are spots of ground sufficiently dry to retain their verdure the entire year. That periodical fevers prevail throughout this region is a fact evident to every one at all familiar with the country.

Anomalous facts like these have been attempted to be explained upon the supposition of an *underground* moisture, or by certain peculiarities of the subsoil. The former of these conditions we have already shown to exist in a prominent degree in portions of the Valley of the Sacramento, where, even admitting the ultimate drying of the surface of our tule lands under the long continued action of a hot summer's sun and an arid atmosphere, a certain amount of moisture is still retained in many locations, only a few inches below.

That these general views of the generation and diffusion of miasmatic exhalations in this locality and its vicinity are not solely theoretical, but are sustained by facts derived from daily experience, we believe might be fully shown by the testimony of most of the medical gentlemen located in this immediate vicinity. Such, at least, is the opinion of those with whom we have conversed. In the Sacramento County Hospital, as we are informed by the late resident physician, Dr. W. G. Hatch, of 430 patients admitted for treatment from Jan., 1st, 1857 to Dec. 31st, inclusive, one in 5.37 were the subjects of intermittent fever. For the latter portion of the year the proportion, was larger, viz.: from Oct. 8th, 1857 to Jan, 1858, one in 2.75 of the patients admitted were afflicted with intermittent fever, or as 91 to 33.*

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* From the report of Dr. W. G. Proctor, of cases treated in the Hospital in this City at an earlier period than that above referred to, to wit; for the year ending June 1856, we condense the following brief statement. It is of particular interest as sustaining the views we have heretofore expressed, not only as to the frequency of periodic fevers in this vicinity, but also as to their almost unexceptional subjection to judicious treatment.

The whole number of cases treated are reported to have been 622, of which 113 were intermittent, and 8 remittent fevers. Of all this class—121—only three terminated fatally—about 2½ per cent.

In explanation of the report Dr. Proctor remarks that, "the comparative paucity of intermittents"—(1 in 5.5 of the whole number)—"herein noticeable, though greater in number than any other single classification of disease, requires the following explanation, situated as we are in a locality so profoundly subject to

In my own experience, one in 5.50 (nearly) of the cases treated during the past year—1857—were clearly and unequivocally the result of malarial influence.

Higher up the river, in the neighborhood of Colusi, where the conditions necessary for the generation of marsh miasma are far more predominant than in Sacramento, the ratio of malarial fevers to the annual sickness from disease of all classes, is much larger.

In the eastern section of the valley, where its boundaries gradually lose their distinctiveness in the foot-hills of the Sierra Nevadas—in the "auriferous region"—the existence of malarious diseases must be differently explained. During the past summer and fall, intermittents and remittents have presented a more than usual prevalence. We have been informed by Dr. Donaldson, of Folsom, twenty two miles in a northeasterly direction from Sacramento, on the American river, that nearly 90 per cent. of the whole number of cases of disease treated by him during the past summer, were of malarial origin—intermittent, remittent, and congestive fevers. This is a large excess over previous years, and is supposed to have arisen from the cleaning out of the water ditches which run in many directions through the neighborhood, and the exposure of the accumulated dirt and vegetable material to the action of the sun. Upon Texas Hill, where the reservoir from which these ditches are supplied is located, and which was also cleaned out at the same time, the class of diseases under review were particularly prevalent; it having been stated that every resident on the Hill was attacked—save two, who were in the habit of sleeping in Folsom. Dr. Donaldson states that the same diseases abound every year, though to a less extent than during the past. Such, in substance, is also the testimony of Dr. Bates in respect to the existence of malarial disease in Mormon Island, a once noted mining locality, some three miles distant from Folsom.

Passing higher up into the mountains, among the gulches and ravines of Placer County, and many other sections, the same class of diseases is said to be generally prevalent, their origin being usually ascribed to the ditches which have been made to wind their courses in almost every direction, for the supply of water for mining purposes. I am informed by a highly intelligent physician, for seven years a resident of

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miasmatic influences. In the first place, Sacramento has for the last year, enjoyed a most extraordinary exemption from diseases of every character, endemics as well as epidemics. Secondly, conducting our institution alike in the character of a Dispensary as well as a Hospital, many patients with light types of intermittents were prescribed for and discharged without even being enrolled upon the records and case book of the house."

Placer Co., that in many of the ravines, remittents and intermittents were scarcely known before the ditches were brought into requisition for the conveyance of water. He states that nothing can be more plain to the medical observer, than their connection with the disease referred to. The soil through which they run contains much vegetable material, and being moistened by absorption, malaria is abundantly exhaled under the influence of the sun. The diseases commence early in June and continue until cold weather. It is a fact worthy of mention, that on the tops or even sides of the hills above a certain level, periodical fevers do not occur. In many of the ravines in the mining regions, however, wet and marshy soil may be found throughout the year, and may sufficiently account for the appearance of fever.

The considerations above presented, and the facts adduced in illustration of some of the prominent medical features of the Valley of the Sacramento, while they are amply sufficient for the support of the views we have on a previous occasion expressed, are not without an intrinsic interest as showing the development of a malarial poison in regions and under circumstances which might ordinarily, and upon general principles, be supposed to be exempt from its influence. They, moreover, forcibly remind us of the uncertainty of any theory of the geographical distribution of disease according to fixed and uniform laws. They present a strong and convincing evidence of the inapplicability of theoretical generalizations in their local and special application—a clear demonstration of the wildness of that philosophy which would reduce the laws of disease to an absolute rule, and which would attempt upon the strength of general facts, however true in the abstract, to define the circumstances under which this or that disease may originate, and measure out the geographical boundaries beyond which it cannot trespass.

It would be an improper interpretation of our remarks upon the existing sources of malaria in the valley, however, to suppose that they are productive of alarming consequences. We have, on a previous occasion, remarked at some length upon the fact of the singular exemption of the inhabitants of that portion of the valley in the immediate vicinity of Sacramento, from the manifestation of severe disease. In fact, the apparent discrepancy between the actual amount of sickness observed and causes fully adequate, under ordinary circumstances, to its production, has been not unfrequently the subject of comment and affords a forcible illustration of an element in our climate as felicitous as it is remarkable. There is a resistance to morbific agents—an elasticity of constitution imparted by the climate, which, as far as we know, is seldom observed elsewhere in regions exposed to malarious influences. It manifests itself, not alone in procuring an unusual exemption from disease, but in that recuperative tendency which it imparts under disease and injuries. It is one of the favorable features of the climate which every medical man soon recognizes, and upon which he places much reliance under circumstances which would be, otherwise, well calculated to awaken anxiety.

So far as concerns the malarial fevers of this district, they are usually of a mild and tractable form, and, within the range of our own observation, have seldom progressed to a fatal termination. The usual antiperiodic remedies, in some form, are generally sufficient to arrest them. A combination of decided efficacy in these diseases is that of the ferruginous preparations with Quinia. Indeed, in many of our diseases, not malarious, the addition of iron to other appropriate remedies is frequently of indispensable utility.

It is not, then, from any idea of the insalubrity of the climate that we have dwelt, at some length, upon the malarial origin of disease in the Valley of the Sacramento, but in explanation of a fact, on a former occasion stated in general terms, and which seemed to be in contradiction of the well-known meteorological elements of the climate. The unusual aggravation of periodical fevers in some localities during the past summer and autumnal seasons was, as has been shown, clearly the consequence of local and extraordinary causes. The cleaning out of the water courses in and around Folsom and on Texas Hill, was evidently the cause of the great increase of disease in those localities, and is a circumstance which may not occur again for a long time. The past season, therefore, cannot be regarded as a test of the salubrity of the places referred to.

In respect to the City of Sacramento itself, no more conclusive evidence of its general healthfulness and of the low rate of mortality from disease of every kind, can be afforded, than the report of the interments for the year 1857.

MORTALITY TABLE FOR 1857.

Months.	Number.	Months.	Number.
January...........	17	August	34
February..........	11	September	22
March.............	16	October...........	28
April	23	November.........	42
May	29	December	25
June	24		
July	22	Total	288

Of the whole number, there are stated to have died of all forms of malarial fevers—intermittent, remittent, and congestive—only four.

Estimating the present population of the city at 18,000, which is supposed to be a close approximation, the entire mortality, deducting still-births, will appear to be about 1.53 per cent. or one in 65.21 of the inhabitants. This we regard as being especially favorable to our locality, when we consider the character of the population and the rapid accessions which are being made in the number of children. From the census of children taken during Oct. 1857, it was ascertained that there were at that time within the city, 1,125 children under 5 years of age—equal to one in 16.2 of the whole population. This proportion, though smaller than that of most older cities, is worthy of being considered for its evident bearing upon the annual mortality.

Of the total mortality of Sacramento during 1857, excluding still-births, 100 are reported to have died under 5 years of age,—or 36.30 per cent.

It is difficult with the sources of statistical information within our reach, intelligently to discuss the true relation of the climate to this class, when compared with other localities. From the reports of the Registrar General we learn that the mortality among children under five years of age, at different periods, was 30.48 per cent., 40.48, 39.39 and 39.77 per cent. of the total mortality; or an average for four years, of 39.78.

In Liverpool, in 1838, the total mortality, deducting still-births, was 6,553, and of these 3,162 were under five years of age, or 48.40 per cent.

In the United States Census returns for 1850, it is shown that in that year in the city of Philadelphia, the deaths among children under five years of age, were 53.3 of the whole mortality. In the city of Baltimore, the proportion for 1850 was 507; in Charleston, South Carolina, 34.93, and in the city of New York, for 1853, 57.10 per cent. Were the relative proportion of children in each of these localities and Sacramento the same, the contrast in favor of the latter would be striking; yet, the inequalities they present in juvenile population, are believed to be insufficient to account for or neutralize the very obvious sanitary advantage of Sacramento in this brief review of mortality.

In Boston, for a period of nine years, the ratio of deaths at five years of age to the total population of that age, was 9 per cent.; in Sacramento, for the past year (a by no means favorable one), it was 9.7 per cent.

The following contrast of Sacramento with some of the leading cities of the United States and elsewhere, is not without interest.

RATIO OF MORTALITY TO POPULATION.

Cities.	Period.	Ratio mortality.
Sacramento	For 1857	1.53*
Boston	" 39 yrs.	2.45
Lowell	" 13 "	2.11
New York	" 33 "	2.55
Baltimore	" 14 "	2.49
Charleston	" 27 "	2.57
Savannah	" 8 "	4.16
New Orleans	" 4½ "	8.10
London	mean rate	2.53
Liverpool	" "	3.34

* Still-births excluded.

In another calculation taken from the same source, it is estimated that the deaths in Charleston are as 1 to 48; in Boston, 1 to 46; in Philadelphia, 1 to 45; in Baltimore, 1 to 43; in Cincinnati, 1 to 35; in New York, 1 to 34, and in Memphis, for 1853, 1 to 34.33. In Sacramento, it has been already shown, that, viewed in this light, the proportion for 1857 was 1 in 65.21; or, including still-births, 62.5. We think that sufficient has been advanced to demonstrate the almost unexampled general salubrity of the climate of Sacramento. When the character of the population and the extrinsic sources of disease are considered and their full force admitted, the experience of the past two years affords no reason for modifying what, previously to that time, we remarked upon the general healthfulness of the country.

By far the largest proportion of deaths in the mortality report for Sacramento for 1857 are set down as being included in the Respiratory class, and of these "Consumption" ranks the highest. Thus, from all diseases of this class, we have 78 deaths, of which 48 are stated to have been of consumption. The proportion is certainly a large one, and is scarcely consistent with the generally received opinions of the adaptability of our climate to individuals pre-disposed to, or suffering from, phthisis.

One in 3.6 for the deaths by the respiratory class of diseases, and one in 6.1 for consumption alone, out of the total mortality, is rather a higher ratio than many of those most familiar with the climate would have been prepared to admit.

Next to phthisis in frequency, stands Pneumonia—17; next to this, Bronchitis—6; and next Hæmoptysis—3.

The relation of all the diseases of this class to the period of the year, may be seen by the following statement, viz.:

MONTHLY MORTALITY BY RESPIRATORY DISEASES—1857.

	Jan.	Feb.	Mar.	Apr.	May.	Jun.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Asthma	1	—	—	—	—	—	1	—	—	—	—	—
Bronchitis	—	2	—	1	1	—	—	—	—	1	—	1
Consumption	6	3	3	5	1	3	5	3	5	3	10	1
Hæmoptysis	—	—	1	1	—	—	—	—	—	1	—	—
Laryngitis	—	—	—	—	—	—	—	—	—	—	1	—
Pneumonia	1	—	2	1	1	—	—	2	1	1	4	4
Total	8	5	6	8	3	3	6	6	6	5	15	6

Of the above, Pneumonia and Bronchitis seem to have observed a closer connection with the hygrometric condition of the atmosphere than any of the others.

It is proper to observe, as a somewhat mitigating circumstance, that of the deaths by consumption, ten were at the time inmates of the County Hospital, and the statement, therefore, includes many who were not, prior to their admission, residents of the city.

Inasmuch, moreover, as by the regulations of the Hospital, all are admissible to this public charity who have been resident in the county for 30 days, it is fair to conclude that many of them came to the city from other portions of the State, with a view to the advantages of the Institution, or had but recently immigrated to the State from other sections of the Union.

A comparison of the mortality of Sacramento with that of San Francisco for the past year, will not be without interest in this connection, as throwing some light upon the relative sanitary condition of the two localities. For this purpose we rely upon the recent report of Doctor A. F. Sawyer of San Francisco.

The total mortality for 12 months between June 1, 1856, and the same date in 1857, is stated to have been 1,153, or, excluding still-births, 1,051.

The following table exhibits the mortality arranged according to its supposed causation:

Mortality at San Francisco from June 1, 1856, to June 1, 1857.

CAUSES.	Males.	Females.	Total.	CAUSES.	Males.	Females.	Total.
Abscess	2	—	2	Fever Nervous	2	3	5
Aneurism	2	—	2	" Intermittent	1	—	1
Apoplexy	15	5	20	" Remittent	—	1	1
Asthma	2	—	2	" Panama	3	4	7
Cancer	5	3	8	" Typhoid	14	1	15
Causes External	94	6	100	" Typhus	5	—	5
Childbirth	—	3	8	" Puerperal	—	4	4
Cholera Infantum	9	7	16	" Scarlet	2	7	9
Cholera Morbus	2	1	3	Gangrene	1	—	1
Consumption	160	56	216	Hemorrhage	4	2	6
Convulsions	16	22	38	Inflammation	3	—	3
Croup	25	18	43	Intemperance	3	2	5
Debility	29	21	50	Malformation	1	—	1
Delirium Tremens	4	—	4	Measles	5	5	10
Dis. of Aorta	1	—	1	Peritonitis	—	3	3
Dis. of Brain	59	27	86	Paralysis	1	3	4
Dis. of Bowels	37	15	52	Premature Birth	2	3	5
Dis. of Bladder	5	—	5	Rheumatism	1	1	2
Dis. of Heart	28	5	33	Scurvy	2	—	2
Dis. of Hip	1	—	1	Scrofula	13	1	14
Dis. of Liver	13	2	15	Syphilis	11	3	14
Dis. of Lungs	51	17	68	Smallpox	2	—	2
Dis. of Spine	2	—	2	Tetanus	—	1	1
Dis. of Stomach	2	4	6	Teething	5	6	11
Dis. of Throat	28	26	54	Thrush	1	—	1
Dis. of Womb	—	1	1	Whooping Cough	4	5	9
Diabetes	1	—	1	Unknown	35	10	45
Dropsy	8	3	11				
Epilepsy	1	4	5	Total	733	318	1051
Erysipelas	2	2	4	Stillborn	—	—	102
Fever	7	2	9				
Fever Congestive	1	3	4	Total	—	—	1153

Separating from the above the diseases belonging to the respiratory class, we have the following monthly statement:

DISEASES.	June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.
Consumption	11	10	17	16	15	18	21	18	21	24	27	18
Other respiratory diseases	7	4	3	6	7	4	8	11	8	7	6	2

During the previous year, the total mortality was 1,226.

Estimating, with Dr. Sawyer, the present population of the city at 50,000, and excluding the still-births, the rate of mortality for the year ending June 1, 1857, was as 1 to 47.57 of the inhabitants. For the previous twelve months it is given at 1 to 43.85. We have already stated this ratio to be 1 in 65.21 for Sacramento.

By reference to the "table" above given, it will be seen that only 6 deaths are reported to have occurred from the combined sources of intermittent, remittent, and congestive fevers, and it is probable that most of these were imported cases.

Of diseases of the respiratory class, however, we have the startling announcement of not less than 284 deaths; and of these, 216 are set down as having been due to consumption; or, of the whole mortality, the deaths by this class were 1 in 3.7, and by consumption alone 1 in 4.8.

The mortality by consumption is stated to have been greater during the past year than at any previous period, in the proportion of 18.73 per cent. of the entire mortality to 14.60 per cent. the year immediately preceding; exhibiting, as remarked by Dr. Sawyer in his report, a destruction from this cause in San Francisco equal to the rates of a similar mortality in Eastern cities.

For Sacramento, a similar calculation for 1857 gives 16.31 per cent., if we can rely upon the records of mortality.

Recurring to the latter locality, some idea of the prevalence of the class of diseases now under consideration may be obtained from the following statement, viz.:

MORTALITY AT SACRAMENTO BY RESPIRATORY CLASS—1850–7.

YEARS.	DISEASES.											TOTAL.
	Consumption.	Pneumonia.	Bronchitis.	Hydrothorax.	Congestion of lungs.	Hæmoptysis.	Pleuritis.	Influenza.	Emphysema.	Asthma.	Laryngitis.	
1850	20	9	1	1	—	—	1	—	—	—	—	32
1851	19	11	1	—	—	—	1	1	—	—	—	33
1852	26	10	6	—	3	—	—	—	—	—	—	45
1853	20	11	—	1	3	2	—	—	—	—	—	37
1854	25	12	—	—	2	—	—	—	—	—	—	39
1855	41	5	2	—	—	1	—	—	—	—	—	49
1856	46	13	2	—	2	1	—	—	1	—	1	66
1857	48	17	6	—	1	3	—	—	—	2	1	78
Total	245	88	18	2	11	7	2	1	1	2	2	379

MONTHLY MORTALITY AT SACRAMENTO BY RESPIRATORY CLASS.

	1852.													1853.												
	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Consumption	1	3	4	2	1	1	3	3	4	.	4	.	26	2	.	1	4	1	1	1	2	.	3	1	4	20
Pneumonia........	.	.	1	.	.	.	1	.	3	1	4	.	10	3	.	.	2	.	.	.	.	1	1	1	3	11
Bronchitis	.	.	1	.	.	.	1	4	.	.	.	.	6	.	.	.	.	.	.	.	.	.	.	.	.	..
Hæmoptysis	.	.	.	.	.	.	.	.	.	.	.	.	..	.	.	.	.	.	.	.	.	.	.	1	1	2
Congestion Lungs.	.	.	.	.	.	.	.	.	1	.	.	2	3	.	1	.	.	.	.	.	1	.	.	.	1	3
Emphysema	.	.	.	.	.	.	.	.	.	.	.	.	..	.	.	.	.	.	.	.	.	.	.	.	.	..
Hydrothorax	.	.	.	.	.	.	.	.	.	.	.	.	..	1	.	.	.	.	.	.	.	.	.	.	.	..
	1854.													1855.												
Consumption	6	1	4	.	2	1	1	1	2	3	3	1	25	4	2	4	6	5	2	.	3	2	2	7	4	41
Pneumonia........	2	1	1	1	.	.	1	.	.	3	2	1	12	1	.	.	.	.	1	.	.	.	1	1	1	5
Bronchitis	.	.	.	.	.	.	.	.	.	.	.	.	..	.	1	.	.	.	.	.	.	.	1	.	.	2
Hæmoptysis.......	.	.	.	.	.	.	.	.	.	.	.	.	..	.	.	.	.	.	.	.	.	.	.	1	.	1
Congestion Lungs.	2	.	.	.	.	.	.	.	.	.	.	.	..	.	.	.	.	.	.	.	.	.	.	.	.	..
	1856.													1857.												
Consumption	6	3	3	5	1	3	5	3	5	3	10	1	48	4	3	1	6	5	5	4	4	2	6	1	5	46
Pneumonia	1	.	2	1	1	.	.	2	1	1	4	4	17	.	1	1	.	.	4	.	2	.	1	1	3	13
Bronchitis	.	2	.	1	1	.	.	1	.		.	1	6	1	.	.	.	.	.	.	1	.	.	.	.	2
Hæmoptysis	.	.	1	1	.	.	.	.	.	1	.	.	3	.	.	.	.	.	.	.	.	.	1	.	.	1
Congestion Lungs .	.	.	.	.	1	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	2
Emphysema	.	.	.	.	.	.	.	.	.	.	.	.	..	.	.	.	.	.	.	.	.	1	.	.	.	1
Asthma.....	1	.	.	.	.	.	1	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	..
Laryngitis........	.	.	.	.	.	.	.	.	.	.	1	.	1	.	.	.	.	1	.	.	.	.	.	.	.	1

Without present comment on the above, we subjoin the following statement, arranged according to the ages of the deceased:

AGES OF DECEASED BY RESPIRATORY CLASS—1852-7.

	1852.															1853.														
	Under 1.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 & over.	Unknown.	Under 1.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 & over.	Unknown.
Consumption..	.	.	.	.	.	7	13	3	1	.	1	.	.	.	1	.	.	.	.	1	3	8	1	.	2	2	.	1	.	2
Bronchitis....		.	.	.	.	.	1	1	1	.	.	.	.	2	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Pneumonia....	.	1	.	.	.	1	1	3	.	1	2	.	.	.	1	.	4	.	1	.	1	2	.	2	.	1	.	.	.	.
Congest. Lung	.	.	.	.	.	.	..	.	.	1	1	.	.	1	.	.	.	.	.	.	.	1	2	.	.	.	.	.	.	.
Hydrothorax..	.	.	.	.	.	.	..	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.
Hæmoptysis..	.	.	.	.	.	.	..	.	.	.	.	.	.	.	.	.	.	.	.	1	1	.	.	.	.	.	.	.	.	.
	1854.															1855.														
Consumption..	.	1	.	.	.	4	8	2	2	3	3	1	.	1	.	1	.	.	1	4	5	9	6	8	2	.	.	1	1	3
Pneumonia....	.	1	.	1	.	4	1	.	2	1	.	.	.	.	.	.	1	.	.	.	.	.	1	1	1	1	.	.	.	.
Bronchitis ...	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	1	.	.	.	.
Hæmoptysis..	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.
Congestion...	.	.	.	.	.	.	.	.	.	.	.	1	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	1856.															1857.														
Consumption..	2	2	.	.	2	6	8	14	3	3	1	.	1	1	3	1	2	.	.	4	4	9	10	9	4	.	2	2	.	.
Pneumonia ..	3	2	.	.	.	.	4	..	1	1	2	.	.	.	.	5	5	.	.	1	1	2	1	1	1	1	.	.	.	.
Bronchitis....	.	.	.	.	.	1	.	1	.	.	.	.	.	.	.	1	1	.	.	.	.	.	1	1	.	.	1	1	.	.
Hæmoptysis..	.	.	.	.	.	.	.	..	1	.	.	.	.	.	.	.	.	.	.	1	.	.	..	2	.	.	.	.	.	.
Congestion...	.	1	.	.	.	.	.	1	.	.	.	.	.	.	.	1	.	.	.	.	.	.	..	.	.	.	.	.	.	.
Emphysema..	.	.	.	.	.	.	.	..	.	.	1	.	.	.	.	.	.	.	.	.	.	.	..	.	.	.	.	.	.	.
Asthma......	.	.	.	.	.	.	.	..	.	.	.	.	.	.	.	.	.	.	.	.	.	.	..	.	.	2	.	.	.	.
Laryngitis ...	.	.	.	.	.	.	.	..	.	.	.	1	.	.	.	.	.	.	.	.	.	.	..	.	.	.	.	.	1	.

The ratio of mortality by the above tabular summary for the respiratory class of diseases is, therefore, the following:

Year.	Per Cent.	Year.	Per Cent.
1850	3.55	1854	14.66
1851	11.78	1855	15.07
1852	7.12	1856	19.81
1853	11.11	1857	17.08

The annual average mortality by this class, for the eight years, has been 12.52 per cent. of the entire mortality.

The result we have obtained for 1857 differs somewhat from that given by another authority, recently, in the published report of mortality for that year. This is mainly owing to the fact of "diphtheritis," of which there were reported six cases, having been included among the respiratory class of diseases. Inasmuch, however, as this disease cannot be considered, primarily at least, to be an affection of the respiratory organs, we have excluded it. This disease—diphtheritis—is one of peculiar interest in this country. It has been of extensive prevalence and alarming fatality in some districts of the State. Insidious in its accession and in the development of its early stages, rapid in its progress, and oftentimes disastrous in its results, it forms a subject worthy of separate and distinct consideration.

Though the larynx may, and often does, become affected by extension of disease, the original seat of the inflammation, and of the pultaceous exudation which characterizes it, is in the posterior fauces, around the soft palate, and the upper portion of the pharynx.

The history of the disease, we believe, fully justifies its exclusion from the respiratory class.

The mortality by consumption alone may be more perfectly and distinctly estimated by the following "table:"

Mortality by Consumption.—1850–7.

Year.	Per Cent.	Year.	Per Cent.	Year.	Per Cent.
1850	2.22	1853	6.00	1856	13.81
1851	6.78	1854	9.39	1857	16.31
1852	4.11	1855	12.61		

Yielding an annual average mortality of 8.99 per cent.

Some qualifications ought to be admitted in the above for the years 1850 and 1852, when the cholera prevailed in this city. During the former of these years, 351 are reported to have died of cholera, and a very large number by cholera morbus, congestive fever, etc., the different nomenclature being in accordance with the different views of the attendants. One hundred and eleven cases were registered in 1852.

Some modifications might also be just in view of the sources of error to which the registry of interments was subject for the first three or four years included above—errors affecting not only the number, but the classification of deaths. Notwithstanding the utmost diligence on the part of the "undertaker," the carelessness which characterized all the transactions of the early period of the settlement of California, the destitute and forsaken condition of many of the sick, and the frequent ignorance of the attendants of those able to procure assistance of the true nature of their sickness, were sufficient to detract very materially from the value of the early records. There is reason to believe that many were at that time set down as deceased of consumption as a convenient name for a disease the real character of which was, in fact, unknown, but which was marked externally by great emaciation and other general signs commonly associated in the popular mind with phthisis pulmonalis.

In the early history of Sacramento, many morbific causes were recognized, arising from the social condition of the population, from which the present inhabitants are exempt; and the destitution of many of the immigrants, the exposure to fatigues and hardships for which they were unprepared, the mental and physical sufferings encountered, were well calculated to induce a condition of constitution of which an anæmic cachexia and defective nutrition were the predominant signs, and which might easily be regarded, in the absence of all other information, as the effect of phthisis.

Considering, therefore, these and many other sources of error to which the early records were exposed, it is fair to doubt their perfect reliability.

Probably, in an estimate for the whole period of eight years, 6.50 or 7 per cent. would be a much nearer approximation to the truth than the result above obtained—8.89.

Without desiring to prolong this article, we cannot omit a brief tabular comparison of the mortality by consumption in this locality, with that reported as appropriate to some of the Eastern cities.

In Dr. Barton's tables (Southern Medical Reports), quoted by Dowler, of N. O., in a recent number of the *N. O. Med. and Surg. Journal*, the mortality for various cities is stated as follows:

Ratio of Deaths by Pulmonary Diseases to Total Mortality.

Cities.	Ratio from Phthisis.	Ratio from all Respiratory Diseases.
Philadelphia	14.84	28.57 per cent.
New York	17.50	28.08 "
Havana	19.50	25.07 "
Boston	15.30	23.97 "
Baltimore	18.20	23.33 "
Charleston	18.27	77.73 "
Mexico (city)	2.45	—— ——
Norfolk	11.01	12.78 "
New Orleans	9.37	13.87 "
Sacramento (8 years)	7.36	11.39 "
San Francisco (2 years)	16.66	23.69 "

The results for Sacramento and San Francisco are added by ourselves. That for San Francisco has been calculated from Dr. Sawyer's paper, before referred to.

We believe they give as correct a showing as any which the records of mortality will admit of, and fully substantiate the general proposition of the salubrity of our climate, notwithstanding the many extrinsic causes of mortality incidental to our present condition.

To the statistical calculations made by Dr. Dowler, in the article referred to, might be added for Sacramento, for eight years—from 1850 to 1857 inclusive (as an approximation), one death by consumption, to 13.70 of the total mortality.

Perhaps candor would require the admission that, if we regard the mortality for the past two years alone, the proportion would be larger, to wit., one in 6.6. This is due, in part, to an actual and legitimate increase of mortality by the disease under consideration, and in part to the accumulation of such cases in the County Hospital. It is worthy of remark, as fully exemplifying the evil of intrusting the management of such public charities to political or municipal control, that this institution, during the past year or two, under the liberal and extravagant, but, where the interests of the sick are considered, by no means humane management of a non-medical board, and a steward the creature of its authority, obtained a reputation which some of our best hotels might have envied, for the variety and abundance of its culinary provisions. Many, therefore, sought within its walls those comforts of which destitute circumstances deprived them elsewhere.

In this mismanagement we believe the physicians of the Hospital to have been exempt from censure, that department being, by the custom of the institution, under the general control of other officers. Probably the evil has of late been corrected.

For the following statement we are indebted to Dr. J. F. Montgomery, the present resident physician.

The whole number of patients admitted to the Hospital from Feb. 1, 1856, to Feb. 1, 1858, were 576.

Of these, there died of phthisis, 18, or 3.12 per cent.; the nativities and ages of the deceased being as follows, viz.:

Nativities of Fatal Cases of Phthisis.

New York	5	Vermont	1
Maine	1	Ohio	1
Indiana	1	Ireland	4
Massachusetts	1	Switzerland	1
Tennessee	1	Nova Scotia	1
Alabama	1		

Ages of Deceased by Phthisis at Hospital.

20 to 25	2	40 to 45	1
25 to 30	3	45 to 50	1
30 to 35	5	50 to 55	0
35 to 40	4	55 to 60	2

In the present state of our information, it is impossible satisfactorily to discuss the relation of our climate to tubercular phthisis, or its probable influence upon those who, being the subjects of this disease, may be exposed to its conditions. The present adult population have all, with a very few exceptions, immigrated into the State within a few years, and most of them with constitutions more or less modified by influences foreign to our climate. Not a few have been tempted to our shores in the hope of warding off, by a warm and more genial atmosphere, the threatened or already manifest indications of tubercular disease. What is to be the effect of the climate upon the rising generation, upon those who, having been brought here at an early age, or having been born in our midst, are the proper subjects to be deeply and organically impressed by the climatic conditions to which they are exposed, can be the subject of conjecture only. The information we possess of the health of the *original native* population in this respect, is too conflicting to be relied upon. If the laws relative to the climatological distribution of disease as referred to, and so fully discussed by Mr. Blodget, in his work on Climatology, are of any value, even in their relation to phthisis, this ought to be a favorite resort for the valetudinarian. Upon this, as upon all laws which concern the distribution of disease, we have but little faith in generalizations; though it is probable that the views entertained by Mr. Blodget may be verified by the more southern valleys of California. The chilling atmosphere and high ocean winds prevalent in and around San Francisco, during the summer season, the interruption of the cutaneous secretion, and the consequent unnatural burden imposed upon the lungs and other internal emunctories, can scarcely fail of being more or less prejudicial.

What is to be the ultimate consequence of this climatic feature upon the kidneys, this is not the place to inquire, nor are the means at hand for its discussion.

To some extent, but in a much modified sense, the same remark may apply to the extremes of temperature noticeable even in this Valley during the same season, and to the thick fogs which prevail in the winter and spring months along the river.

There are few communities, probably, in which there has been exhibited in the daily life and customs a greater carelessness of health, a more wanton disregard of hygienic rules, a more reckless exposure to morbific agencies than in that of Sacramento, in years past. Relying upon the supposed salubrious influences surrounding them, and absorbed in the busy pursuits of wealth, too many have been prone to neglect the early manifestation of disease, and to disregard the necessity of protecting themselves by suitable clothing against the alternations of temperature to which, during a large portion of the year, they are daily exposed. The frequently repeated bronchial irritations thus excited are, without doubt, the primary source of most of the pulmonary affections common in Sacramento. The wonder is that they are not even more prevalent.

The small amount of humidity in the atmosphere at seasons most subject to rapid and extreme alternations of temperature, probably affords the true explanation of the general exemption of the population from their evil influences. By reference to the tabular statement of mortality, previously given, it will be seen that of the deaths by Pneumonia and Bronchitis during the past six years, 36.7 per cent. of the former, and 56.2 per cent. of the latter, occurred between April and November (not inclusive); or of these two diseases together 40.4 per cent.

In other, more southern sections, however, these unfavorable conditions are said not to exist, and a climate may be found likely to prove highly advantageous as a resort for invalids in the *incipient* stages of the terrible malady under consideration.

The lengthy digression into which we have been drawn, having no real connection with the original purpose of the present article, has arisen from reflections awakened by the brief summary of the annual mortality report above given, and not from a desire to enter upon a discussion of the difficult questions embraced in a consideration of the relation of our climate to phthisis. Indeed, the whole history of that disease is well calculated to weaken our faith in the efficacy of any climate, and to strengthen the conviction that when once sufficiently developed to awaken suspicion, it is already beyond the curative influence of change of air. Favorable or adverse circumstances may prolong or hasten the final event, but the records of mortality are forever proclaiming the uncertainty of all our resources, and the ultimate inefficacy of medicinal and hygienic means.

Sacramento, Cal., February, 1858.

Art. VI.—*Report of One Hundred and Forty-two Cases of Fracture treated in Bellevue Hospital, New York.* By J. J. Campbell, M.D., late House Surgeon to Bellevue Hospital.

Inferior Maxilla—Number of Cases, 5.

Case 1.—E. M., female, æt. 35, good constitution, admitted with compound comminuted fracture of the body of the lower jaw, on the right side, near the angle, caused, Oct. 6th, by being thrown down stairs after being severely beaten about the face. A gutta percha mould was made for the jaw, and retained in place by a four-tailed bandage; several pieces of bone came out of the wound in the gum; nearly all her molar teeth had either been destroyed by disease or knocked out. Some weeks after her admission, an abscess formed internally over the point of fracture, and when opened discharged pus and some small pieces of bone ; her diet was fluid. She was discharged Dec. 18th, cured ; the union was firm, the left cheek was more prominent than natural, and her incisor teeth did not meet exactly.

Case 2.—P. M., male, æt. 9, good constitution, admitted with double compound comminuted fracture of the body of the lower jaw, left of the symphysis menti, caused, Dec. 4th, by being knocked down and trod upon by a horse ; he also sustained a very extensive scalp wound. The internal wound communicating with the fracture, was large and very irregular. Its lips were approximated by sutures. After a few days a bandage was applied so as to confine the lower to the upper jaw. Good union, with but very little deformity, resulted, after several small pieces of bone were discharged both by the external and internal wounds. This patient was under treatment about three months.

Case 3.—M. P., male, æt. 34, good constitution ; admitted for compound fracture of the right side of the body of the lower jaw, caused, Dec. 21st, by falling two stories and striking his jaw. No dressing was used in this case. Good union, with but very little deformity, resulted. He kept his jaws as still as possible for four weeks, until union had occurred.

Case 4.—D. D., male, æt. 22, good constitution ; admitted into the hospital with compound fracture of the body of the inferior maxilla, caused, Jan. 17th, by a direct blow. Gutta percha splints, or moulds, were fitted between the molar teeth of the upper and lower jaws. The lower jaw was then confined to the upper with adhesive strips and roller ; good union occurred in two months ; no deformity remained.

Case 5.—P. R., male, æt. 30, intemperate ; admitted with compound fracture of the right side of the body of the lower jaw, caused, Feb. 14th, by a direct blow. He was attacked with inflammation of the tonsils, etc., which prevented any dressing of the jaw until the 23d. The fracture was treated like the one just preceding. When discharged, March 19th, the bone was well united and no deformity resulted.

Remarks.—Of the five cases above mentioned, it will be seen that four of them occurred in males, and the fracture was in the body of the bone. In the four cases, in which the side is stated, it will be observed that three of them were on the right side, and one on the left. It will also be seen that they were all compound, and two of them comminuted. The best results appear to have occurred in those cases in which the dressings simply confined the lower to the upper jaw. The average duration of treatment was about fifty-three days. The longest period was three months, and the shortest twenty-six days. With the exception of Case 2 the union was good and firm. The deformity in Case 1 was considerable ; in Cases 2 and 3 very little; and in Cases 4 and 5 not appreciable.

Clavicle—Number of Cases, 17.

Case 1.—W. D., aged 50, good constitution, intemperate in his habits, was admitted April 1st, with oblique fracture of the clavicle, three inches from its sternal extremity, caused two days previously by falling on his shoulder. Fox's apparatus was applied, and removed on the 16th of the same month. The union was pretty firm, but there was a good deal of deformity consisting of a large callus and half an inch of shortening. When discharged, April 27th, the use of the arm was as good as ever.

Case 2.—M. K., aged 49, good constitution, intemperate in his habits, was admitted April 16th, with oblique fracture of the clavicle, near its middle, caused nine days previously by falling and striking his clavicle on a stone. On examination, a false point of motion, surrounded by an abundant deposit of lymph, could be detected. There were three-quarters of an inch of shortening. Fox's apparatus was applied, and removed in twelve days—good union having taken place in the meantime. When discharged, May 5th, there was half an inch of shortening ; but the use of the arm was as good as it was before the accident.

Case 3.—C. R., aged 43, pretty good constitution, slightly intemperate in his habits, was admitted May 8th, for transverse fracture of the clavicle, a little over four inches from its sternal extremity, caused by falling and striking on his clavicle, three days before. Fox's apparatus was put on, and dispensed with in nineteen days, at the end of which time union was found perfect. The deformity that remained was very slight, and consisted entirely of callus. This case is interesting, in as much as the fracture was not suspected, as the patient did not complain of it until it was discovered on examining him closely. He could without difficulty, and with but very little pain, place the arm in any position.

Case 4.—J. D., aged 27, good constitution, temperate in his habits, was admitted August 10th, for transverse fracture of the clavicle, four and a half inches from its sternal extremity, caused three days before by receiving a kick on the bone. The figure of 8 dressing was applied, and kept on until Sept. 5th, when union was found to be perfect, with but very little deformity, which consisted of callus.

Case 5.—J. G., aged 34, good constitution, was admitted August 27th, with oblique fracture of the clavicle, three and a half inches from its sternal end, caused the day before by falling and striking on his shoulder. There was considerable riding by of the fragments when he came under treatment. The figure of 8 dressing was put on, and removed in twenty days. When discharged, Sept. 21st, the use of the arm was good, and the deformity left consisted chiefly of callus.

Case 6.—R. T., aged 38, pretty good constitution, was admitted Sept. 25th, with transverse fracture of the clavicle, one inch from its acromial end, and caused five days previously by being kicked on the part. The inner fragment overrode the outer one for some distance. Fox's apparatus was kept on for thirty-three days. The union was good, and but very little, if any, deformity remained. The use of his arm was excellent.

Case 7.—E. L., aged 31, good constitution, intemperate in his habits, was admitted into the hospital with transverse fracture of the clavicle, one inch and a half from the acromion process, caused Nov. 21st, by a blow on the part with a flat iron. Fox's apparatus was applied, and good union, unattended with deformity, resulted.

Case 8.—C. C., aged 45, good constitution, was admitted for oblique fracture of the clavicle, three inches from its acromial extremity, caused, Nov. 26th, by falling down stairs. She also sustained fracture of the ribs at the same time. She was kept in bed for many days, in consequence of an attack of pneumonia. When she got up she carried her arm in a sling until union had taken place. There was some deformity left at the time of her discharge.

Case 9.—E. Q., aged 40, good constitution, intemperate in his habits, was admitted with transverse fracture of the clavicle, in its outer third, caused by striking directly on a stone, Nov. 21st. A pad was placed in the axilla, the fore-arm supported in a sling that elevated the shoulder, and a broad bandage passed around the arm and thorax. When discharged, January 8th, the union was good, and no deformity remained.

Case 10.—C. N., aged 43, scrofulous, intemperate, was admitted with a comminuted fracture at the junction of the outer with the middle third of the clavicle, caused, Nov. 28th, by a heavy stick of wood falling on the bone. This case was treated similarly to the one just preceding. When nearly well he was attacked with pneumonia. He was discharged Feb. 1st. Union was pretty firm, but there was a good deal of deformity on account of the large size of the callus. Some two weeks subsequently he fell on his shoulder, and refractured the bone. It united again, the deformity remaining about the same.

Case 11.—C. A., aged 23, good constitution, was admitted with an oblique fracture at the junction of the middle with the outer third, caused, Dec. 18th, by falling down stairs, and striking on her shoulder. The dressings were similar to those used in Case 9. When discharged, Feb. 8th, the union was quite firm. A little deformity remained.

Case 12.—E. H., aged 25, good constitution, was admitted with oblique fracture of the left clavicle, near the junction of the outer with the middle third, caused, Dec. 20th, by falling down stairs, striking on her shoulder. This case was treated like the one preceding. When discharged, Feb. 4th, the union was good, but there was a little deformity.

Case 13.—A. C., aged 32, good constitution, was admitted Jan. 3d, with oblique fracture of the clavicle, at the junction of the middle with the outer third, caused five days previously by falling and striking on his shoulder. Fox's apparatus was applied. The union was good, but the inner portion was tilted up a little when discharged, Feb. 6th.

Case 14.—T. D., aged 41, good constitution, was admitted with fracture of the clavicle in its outer third, caused, Jan. 1st, by the wheel of a light-wagon passing over his shoulder. Dressing the same as in Case 9. Union occurred, but it was slow. Some deformity remained.

Case 15.—J. C., aged 23, good constitution, was admitted Jan. 5th, for an oblique fracture of the clavicle, half an inch long, extending into the sternal articulation, caused the day before by striking his shoulder forcibly against a projecting beam. The dressings the same as in the case just preceding. It was found impossible to prevent the external portion from projecting forwards. When discharged, Feb. 12th, the union was good, but some deformity remained.

Case 16.—A. R., good constitution, was admitted Feb. 23d, with oblique fracture of the clavicle near its middle, caused, five days previously, by falling and striking on his shoulder. Fox's apparatus was applied and kept on until March 24th, at which time firm union had taken place, with slight tilting upwards of the inner portion. The use of the arm was nearly perfect March 28th.

Case 17.—P. M., aged 25, good constitution, was admitted with oblique fracture in the outer third of the left clavicle, caused, March 12th, by the fall of a weaver's beam on the part. The usual dressing was applied. Good union, with some deformity, resulted.

Remarks.—Of seventeen cases, thirteen occurred in males, and four in females. In thirteen in which the side was noted, eight were on the left, and five on the right. It is a little remarkable that the violence has been direct in nine cases, and indirect in only eight. In one case the fracture was in the sternal extremity of bone, in five cases in the middle third, in six about the junction of the outer with the middle third, and in five in the outer third. It appears from this that fractures are more common in the outer half of the bone. In ten cases the fracture was oblique, in five transverse, and in one comminuted. Fox's apparatus was employed in eight cases; the simple figure of 8 bandage and sling in two; Dr. Jas. R. Wood's dressing, namely, a pad in the axilla, a sling, and a broad belt or bandage to confine the arm to the chest, in six cases; and rest in bed, and afterwards a sling only, in one case. The average duration of treatment was about thirty days for thirteen cases. The shortest period until the dressings were finally dispensed with was twelve days, and the longest sixty days. The average period for firm union to have occurred after the date of the fracture, in seven cases, was about twenty-six days. The shortest, eighteen, and the longest thirty-eight days. In cases nine, ten, eleven, and twelve, the precise time was not noted, but union was evidently very slow. The average period until they were fit to work, in ten cases, was about forty-two days. In two of the cases there was no deformity (these were cases of transverse fracture), but in all the rest it varied from a little to a very great deal, at least in one instance.

Humerus—Number of Cases, 21.

Case 1.—D. G., aged 12, good constitution, was admitted with a compound oblique fracture in the lower third humerus, caused, April 23d, by getting his arm twisted in machinery. The wound on the soft parts was on the inner aspect of the arm. Only one splint was applied, and that to the outer side of the arm. The wound was covered by dressing that could be removed and renewed at any time without disturbing the broken bone. Some of the soft parts around the wound sloughed, and the patient's general health ran down. He remained under treatment five months. When discharged the bone was firmly united, and only a few sinuses remained in the place of the old wound. There was a stiffness of the elbow joint, owing to deposition of lymph about and in it.

Case 2.—C. R., aged 14, good constitution, was admitted with simple oblique fracture of the humerus at the junction of the upper with the middle third, caused, April 26th, by getting his arm caught in machinery. He suffered from some other injuries, but they were slight in their nature. The arm was dressed, with four splints, April 28th, and kept so for four weeks, at the expiration of which time good union was found to have taken place, without any deformity.

Case 3.—E. H., aged 27, good constitution, was admitted for fracture of the inner condyle of the humerus, caused, June 15th, by falling down stairs and striking on her elbow. Loçal antiphlogistics until June 25th, to subdue the inflammation of the joint. The arm was dressed with pasteboard splints that kept the fore-arm bent at right angles with the arm. When discharged, August 20th, she had good use and free motion of the joint.

Case 4.—J. B., a healthy, robust child, had his right humerus fractured transversely in its middle, during delivery, July 28th. A gutta percha splint, moulded so as to cover three-fourths of the circumference of the arm, was properly padded with lint and applied. A small pad was then placed on the inner side of the arm, and the whole secured to the chest by means of adhesive plaster and bandages. The dressings were removed on the eighteenth day, and union found to be perfect. The dressing was re-applied as a preventive against re-fracture until firm union should take place. No deformity resulted

Case 5.—S. J., aged 62, delicate constitution, slightly intemperate, was admitted for oblique fracture of the humerus, extending through the trochlea into the joint, caused by falling on his elbow, August 3d. When the fractured surfaces were not held in position, and the fore-arm semi-flexed, the ulna would escape backwards, carrying the inner condyle with it. The arm and fore-arm were placed at right angles in a hollow tin splint on the eighth day. Splint removed Sept. 4th, and slight passive motion made for a few minutes, when it was re-applied for thirteen days more, and passive motion again tried. This course was adopted until Oct. 19th, when the splints were discontinued, as the union was good. Passive motion, douche, and friction resorted to daily to increase the motions of the joint, which were very limited.

When he took his discharge, some time afterwards, active motion of the joint was limited.

Case 6.—M. C., aged 64, constitution pretty good, slightly intemperate, was admitted with a fracture of the internal condyle of the humerus, extending into the joint, with dislocation backwards of the ulna, caused, Sept. 3d, by falling on her elbow. This case was treated like the preceding one. The splint was applied on the 17th, and dispensed with on the 11th of the following month. When discharged, Nov. 6th, there was some deformity caused by the internal condyle, which was a little higher up, and more posterior than it should be. The union was good, but the motions of the joint were not perfect.

Case 7.—F. W., aged 27, delicate constitution, slightly intemperate, was admitted with transverse fracture of the humerus at the junction of the middle with the lower third, caused, August 16th, by muscular effort while throwing a small stone a short distance. He did not attempt to throw the stone very far, but he wanted to throw it very quick. He never had a fracture before. The limb was put up in a starch apparatus the next day. Oct. 3d, the dressing was removed and the union found to be perfect without any deformity. The use of the arm and fore-arm was excellent.

Case 8.—J. F., aged 56, delicate constitution, was admitted with a very oblique fracture of the humerus, commencing in the middle near its junction with the lower third, and extending downwards, involving the ridge of the outer condyle, to within two inches of the joint. He had this humerus fractured once before. The fracture was caused by falling from a height and striking on his arm. A starch apparatus was applied Sept. 20th, four days after the accident, and removed Nov. 9th. The union is perfect, and the deformity is very slight. When discharged, Nov. 22d, the use of the arm was very good.

Case 9.—M. L., aged 54, good constitution, intemperate, was admitted for a comminuted fracture of the head of the humerus, caused Oct. 10th, by falling several feet, striking his shoulder on a rock. When admitted the joint was very much swollen. The capsule was evidently a good deal torn, as the upper end of the lower fragment could be carried out readily from under the acromion in various directions. On placing one thumb in front and the other behind the joint, and pushing backwards and forwards, the loose fragments of the head of the bone could be felt to move freely on one another. A gutta-percha cap was placed over the joint, and the arm secured to the body by means of adhesive plaster and bandages. Between the body and arm a long pad was placed, extending from the axilla to the inner condyle of the humerus. The fore-arm was supported in a sling. The dressings were removed and re-applied several times, until they were finally dispensed with, Dec. 4th. The joint was a little stiff, but rapidly improved under the douche and frictions. The head of the bone is much larger than natural, and quite prominent in front.

Case 10.—R. D., aged 50, good constitution, temperate, was admitted with oblique fracture of the surgical neck of the humerus, caused, Nov. 16, by slipping down stairs, striking on her side, arm, and shoulder, as she descended. The dressing consisted of a broad thoracic pad extending from the axilla to the floating ribs, four coaptating splints and adhesive plaster to bind the arm to the chest.

Jan. 4th.—The union is good, but the motions of the limb, although free, are not as perfect as would be desirable.

Case 11.—J. G., aged 40, good constitution, intemperate, was admitted for oblique fracture of the surgical neck of the humerus, caused, Oct. 31st, by a blow on the upper part of the arm. Coaptating splints were applied, and the arm secured to the side of the chest. At the termination of six weeks the union was perfect, and the use of the limb good. No deformity remained.

Case 12.—E. W., aged 20, good constitution, was admitted with fracture in the shaft of the humerus, caused, Nov. 26th, by falling down stairs and striking on her arm. Four coaptating splints were applied, Dec. 3d, and the arm secured to the chest. She took her discharge on the 16th, and the result is not known.

Case 13.—J. Q., aged 60, good constitution, was admitted with fracture of the anatomical neck of the humerus, caused by falling and striking his shoulder on a curb-stone, Dec. 20th. It was treated the same as case 9. The union was perfect and no deformity remained when the dressings were removed.

Case 14.—J. W. B., a healthy child, aged 16 days, had his humerus fractured transversely near its middle, by falling out of bed, Dec. 4th. Same treatment as Case 4. Good union, without any deformity, resulted in three weeks.

Case 15.—T. D., aged 44, good constitution, was admitted for an oblique fracture of the junction of the upper with the middle third of the humerus. Three coaptating splints were applied and the arm secured to the chest for thirty-four days, at the end of which time good union, unattended with deformity, was found. The use of the arm was excellent when discharged.

Case 16.—A. B., aged 56, good constitution, was admitted for oblique fracture extending downwards from the anatomical neck about two inches, caused, Nov. 22d, by falling and striking the upper part of the arm on the edge of a water-pail. The dressings were the same as in Case 10. The parts were examined, Jan. 2d, and good union found. Passive motion, douching and friction commenced. When discharged, Jan. 10th, the use of the limb was very good.

Case 17.—J. T., aged 32, good constitution, intemperate in his habits, was admitted with oblique fracture in the middle third of the humerus, caused, Dec. 18th, by having the wheels of a wagon pass over his arm. Same treatment as in Case 10. The dressing was removed, Jan. 28th, and the usual after-management commenced. When discharged in February the use of the arm was nearly perfect. No deformity remained.

Case 18.—J. M'D., aged 12, good constitution, was admitted for fracture at the anatomical neck of the humerus, caused, Jan. 3d, by falling fifteen feet and striking on his shoulder. Treated in the same manner as Case 9. The dressing was removed, Feb. 1st, and when he was discharged, Feb. 16th, the motions of the arm were perfect. Some deformity remained consisting of a sharp projection on the anterior aspect of the shoulder.

Case 19.—M. C., aged 28, constitution tainted with secondary syphilis, was admitted for transverse fracture of the right humerus, just above the condyles, caused, Feb. 7th, by a fall down stairs. Ten days subsequently paste-board splints were applied, and removed in seven weeks later; but as no union had taken place they were re-applied. He asked for his discharge in the middle of June and returned July 24. No union had occurred in the meantime, although the splints were kept on all the while. On Sept. 3d, the blade of a tenotomy knife was passed between the fractured ends, and the splints re-applied. Oct. 20th, as no attempt at union had been made, he was discharged.

Case 20.—J. R., aged 53, suffering from phthisis, was admitted with fracture through the internal condyle of the humerus obliquely into the joint, caused, Feb. 24th, by falling on his elbow. Considerable inflammation of the joint followed, but it subsided under treatment in a few days. The fore arm was placed in a semiflexed position, and two angular splints applied for twenty-four days, after which passive motion was instituted. When discharged, at his own request, April 18th, there was good union, some deformity and stiffness of the joint.

Case 21.—T. R., aged 35, good constitution, intemperate, was admitted with transverse fracture of the shaft of the humerus, just below its surgical neck, caused Feb. 17th, by falling on his side. The treatment the same as in Case 10. Good union with but very little deformity resulted in six weeks.

Remarks.—Of twenty-one cases, sixteen were in males and five in females. In fourteen in which the side was noted, eight occurred on the left side, and six on the right. The violence was direct in fifteen instances, and indirect, no doubt, in the remaining six. The head of the bone was comminuted in one case, the fracture was at the anatomical neck in two, at the surgical neck in two, in the upper third in two, at the junction of the upper and middle thirds in two, in the middle third in three, at the junction of the middle and lower thirds in one, in the lower third in three, through the internal condyle in four, and indefinite in one case. In twelve instances the fracture was oblique, in seven transverse, and in one comminuted. Out of all the cases, one only was compound. The average duration of treatment, leaving Cases 1 and 19 out of the calculation, was nearly thirty-six days. The shortest period was eighteen days, and the longest forty-nine. The average period for union, after the date of the fracture, in seventeen cases, was forty-one days; the shortest eighteen, and the longest seventy-seven days. The average period for six cases until they were able to go to work, was sixty-eight days; the shortest forty-four, and the longest seventy-six. In one case no union occurred, and in another it required nearly five months. In eight cases there was no deformity, but in eight more there was some. The use of the arm was good in eight cases in which the break was in the shaft. In the four cases in which the internal condyle was fractured, only one had good and free use of the joint, etc. In a few instances the use of the limb was very imperfect.

Ulna—Number of Cases 8.

Case 1.—D. G., aged 12, good constitution, was admitted for double fracture of the ulna, one two inches from the olecranon, and the other two inches from the carpus; caused, April 23d, by getting his arm caught in machinery. Two splints, each one wider than the fore-arm, with interosseous pads, were applied. The dressings were removed in three weeks, and the union found good. No deformity remained.

Case 2.—H. L., aged 22, delicate constitution, was admitted for oblique fracture through the distal portion of the olecranon, complicated with dislocation forwards of the ulna, caused, June 13th, by falling out of a window one story from the ground, and striking on her elbow. Pretty severe inflammation of the joint followed, but it soon yielded to treatment. June 24th, the arm and fore-arm were dressed with a starch apparatus, which kept the latter extended on the former. The result of this case is not known, as she was sent to the insane asylum July 1st.

Case 3.—S. O. B., aged 50, delicate constitution, was admitted with transverse fracture of the ulna, near its middle, caused, August 15th, by a blow on the part. Two splints, each one wider than the fore-arm, with interosseous pads, were applied. When the splints were removed, Sept. 19th, union was good, and there was no deformity. Flexion, extension, supination, and pronation of the hand were perfect.

Case 4.—G. B., aged 59, good constitution, was admitted for fracture of the ulna, at the junction of the middle with the lower third, caused by a fall on 25th of August. Two splints with interosseous pads were applied, and retained by adhesive plaster. Dressings removed Sept. 15th, and good union, etc., found.

Case 5.—C. L., aged 55, good constitution, intemperate, was admitted with a well-marked oblique fracture through the olecranon, caused, Sept. 1st, by falling on his elbow. The treatment the same as in case 2. Dressings removed Oct. 31st, and good bony union found. The motions of the joint were very free.

Case 6.—E. F., aged 38, good constitution, was admitted with fracture of the ulna, four inches above its carpal extremity, caused, Dec. 1st, by a fall. Two splints, with interosseous pads, were applied, and when removed, Jan. 11th, good union, no deformity, and excellent use of the fore-arm, etc., were found.

Case 7.—A. G., aged 40, good constitution, was admitted with oblique fracture of the ulna three quarters of an inch above its carpal extremity, produced, Feb. 17th, by falling on her hand while it was strongly fixed. Two splints, etc., applied to the fore-arm, and removed April 11th, when good union was found. When discharged on the 27th, the use of the hand, etc., were good.

Case 8.—P. McC., aged 50, delicate constitution, was admitted with transverse fracture of the ulna, two and a half inches from its carpal extremity, caused, March 17th, by having a weight fall on it. Two splints, etc., were applied, and when removed, April 11th, good union, no deformity, etc., were found.

Remarks.—Of the eight cases, five were males and three were females. In the seven cases in which the side is noted, five occurred on the left, and two on the right side. The cause was direct violence in four, if not five, of the cases, and indirect in one. In two cases the fracture was through the olecranon process, and in one case the bone was broken in two places. In three of the cases the fracture was oblique, in two transverse, and in three not mentioned. The two cases of fracture of the olecranon were dressed with the starch bandage; all the others were treated with two broad splints and interosseous pads. The average duration of treatment was about thirty-four days. The shortest period was twenty-one days, and the longest fifty-two. The average period from the date of fracture until good, firm union occurred was nearly thirty-seven days. The shortest period was twenty-one days, and the longest sixty-one. There was no deformity in any of the seven cases in which the result is known. In one of the cases, in which the fracture extended through the olecranon, the motions of the elbow were perfect. In the six remaining cases, the use of the fore-arm was nearly perfect.

Radius.—Number of Cases, 13.

Case 1.—H. S., aged 28, good constitution, was admitted with oblique fracture of the radius a little above the styloid process, caused, April 10th, by receiving a blow on the part. The dressings consisted of two interosseous compresses, and two splints extending from the elbow to the ends of the fingers. The fingers were directed downwards. Was discharged cured, May 27th, without any deformity.

Case 2.—M. W., aged 23, good constitution, intemperate, was admitted for oblique fracture of the radius, one inch from its carpal extremity, caused, August 17th, by falling on her hand. Two splints with compresses were applied, and kept in place by adhesive strips. The dressings were removed Sept. 10th, and good union, without any deformity, resulted.

Case 3.—S. J., aged 62, delicate constitution, intemperate, was admitted with transverse fracture of the radius, near its middle, caused, August 3d, by a fall. He had this radius fractured three times before. Two splints and pads were put on. As he did not keep the dressings on well, there was a bowing inwards at the point of fracture during the third week. As the callus was still soft, it was bent out straight, and the splints re-applied. By the 9th of October the union was good, but some bowing inwards remained. The fingers could not be fully flexed at this time.

Case 4.—J. K., aged 23, good constitution, was admitted for fracture of the radius, near its middle, caused, Oct. 3d, by a fall on the hand. Two splints with compresses were applied to the fore-arm and hand, keeping the hand adducted. Good union and free motion was the result.

Case 5.—H. S., aged 24, good constitution, was admitted with oblique fracture of the radius, one inch from its carpal extremity, caused, Oct. 5th, by falling on her hand. Two straight splints with compresses were applied, and removed Nov. 13th. Good union, and but very little deformity, resulted.

Case 6.—D. O'B., aged 19, good constitution, was admitted with oblique fracture of the radius of each fore-arm, caused, Oct. 28th, by falling four stories, striking on his hands, etc. Two curved splints with interosseous compresses were applied, so as to keep the hand adducted. By Nov. 28th both bones were well united, but a good deal of deformity, with stiffness of the fingers, remained. Passive motion, frictions, showering, and electricity, restored the use of the hands in a great measure.

Case 7.—J. H., aged 41, good constitution, was admitted with fracture of the radius, two inches from its carpal extremity, caused by catching hold of a support while falling from a height, Nov. 16th. Two splints with interosseous pads were applied, and kept in place by adhesive plaster. The splints extended from the elbow to the hand. The dressings were removed in four weeks, and good union found. When discharged, Jan. 20th, all the motions of the hand, with the exception of extension, were perfect.

Case 8.—M. B., aged 30, good constitution, was admitted for oblique fracture of the radius, about an inch from its carpal extremity, caused, Jan. 5th, by falling on his hand. Two splints with interosseous pads were applied, from the elbow to the wrist. Free motion of the hand was allowed. At the time the splints were removed (Jan. 28th), union was found good, and attended with but little deformity. When discharged, soon afterwards, the motions of the hand, etc., were nearly perfect.

Case 9.—G. McG., aged 42, good constitution, was admitted with fracture of the lower extremity of the radius, caused, Feb. 18th, by falling on his hand. This case was treated like the one just preceding. At the time the dressings were removed (March 17th) the union was found to be firm, and unattended with deformity. Use of the hands not quite perfect.

Case 10.—E. F., aged 60, good constitution, was admitted with oblique fracture in the lower part of the radius, caused by falling on her hand, Feb. 2d. Two small compresses, one on the anterior aspect of the fore-arm, just over the lower part of the upper portion of the bone, and the other on the posterior aspect, just over the lower fragment. These compresses were kept in place by firmly binding on two splints extending from the elbow to the middle of the hand. The hand was kept a little adducted. Free motion of the fingers was allowed. Good union, with but very little deformity, and free motion of the hand, etc., resulted in four weeks.

Case 11.—M. M. G., aged 48, good constitution, was admitted with oblique fracture of the radius, about an inch from its carpal extremity, caused, March 7th, by falling on her hand. Two splints were applied as in Case 7. When discharged, April 6th, the union was good, and the motions of the hand free.

Case 12.—M. A. C., aged 21, good constitution, was admitted with oblique fracture of the lower portion of the radius, caused, March 2d, by a fall on her hand. The dressings were the same as in the one just preceding. Good union, with slight deformity, resulted in seven weeks. The motions of the hand were free.

Case 13.—M. M., aged 29, good constitution, intemperate, was admitted with oblique fracture just above the lower extremity of the radius, caused, Feb. 21st, by falling on her right side. The treatment the same as in Case 10. Splints were removed March 22d, and good union, without any deformity was found. The motions of the hand, etc., were quite free.

Remarks.—Out of twelve of the above thirteen cases, six were males and six were female. In nine of the cases in which the side was noted, seven were on the right side and two on the left. The cause was direct violence in one case and indirect in the remainder. Falls on the hand, while it was extended, appear to have been the most fruitful cause, for twelve of the cases happened in this way alone. In twelve of the instances the point of fracture was not more than two inches from the carpus, and in the two remaining cases it was about the middle of the bone. The direction of the break was oblique in nine instances, transverse in one, and unknown in the three remaining. Two splints with interosseous pads were used in all cases. The average duration of treatment for all the cases was a little over twenty-nine days. The shortest time twenty days, and the longest forty-nine. The average period until good bony union occurred was about thirty-four days and a half in ten cases. The shortest time was twenty-four days, and the longest sixty-seven. Only four of the cases escaped without deformity. In seven of the cases the motions of the wrist, etc., were quite free when they were discharged, and in the remainder some stiffness was left.

Radius and Ulna—Number of Cases, 7.

Case 1.—T. G., æt. 33, good constitution, was admitted with transverse fracture of the radius and ulna, just above the pronator quadratus muscle, caused, March 12th, by falling on his hand. Considerable inflammation followed, but was subdued by the 19th, when two splints with interosseous pads were applied. Good union and free motion May 1st.

Case 2.—H. G., aged 26, good constitution, was admitted for fracture of both bones of the fore-arm, caused by falling down stairs, March 21st. The treatment the same as in the case just preceding. Good union by 21st of April.

Case 3.—C. F., aged 45, good constitution, was admitted with fracture of both bones in their lower third, caused, March 25th, by falling on his arm. Two short splints with interosseous pads were applied, kept in place by adhesive plaster. When the splints were removed, April 20th, the union was firm. There was free motion of the hand.

Case 4.—J. S., aged 28, good constitution, intemperate, was admitted with compound comminuted fracture of the lower ends of both bones, caused by falling from a fourth story window and striking on his hands, May 21st. The opening was on the anterior aspect of the fore-arm. Severe inflammation of the wrist joint followed, and resulted in very free suppuration for nearly a month. The parts were kept in as good position as possible in a fractured bone, for four weeks, when a starch bandage was applied so as to prevent the ulna and radius from approximating. An opening was left in the bandage opposite the wound in the fore-arm, to allow applications to be made to the wound when necessary. It was removed August 6th ; but, as the union was very weak, a single splint was applied. The wound was still discharging a little. Sept. 1st, the union was firm; but a large callus united both bones together. The wrist joint was pretty stiff, and the fingers could be moved but very little. The anchylosis was broken up, and passive motion, etc., instituted. Nov. 30th.—Flexion and extension of the hand and fingers have improved a good deal, but are still far from being perfect.

Case 5.—J. R., aged 12, good constitution, was admitted for fracture of the radius and ulna, near their middle, caused by falling from a car, Oct. 6th. No crepitus could be detected, although the false point of motion was very distinct. The dressings were the same as in Case 1. When the splints were removed the union was good, and no deformity remained.

Case 6.—J. C., aged 23, good constitution, was admitted with transverse fracture of both bones, in their upper third, caused, Nov. 27th, by a fall from a stoop eight feet high. The dressings the same as in Case 1. Union good, and no deformity, Jan. 8.

Case 7.—E. G., aged 25, constitution tainted with syphilis, was admitted with fracture of both bones, near their middle, caused, Dec. 8th, by falling forwards on her hand. Dressed the same as Case 1. When discharged, Feb. 1st, the union was good, but the ulna bowed a little backwards.

Remarks.—Four of the seven cases were males, and three were females. The side on which the fracture occurred was only noted in three cases, in two of which it was the left, and the other the right. In three of the cases the cause was indirect violence, in two direct, the remaining two doubtful. The fracture was in the lower third in three cases, in the middle third in two, and in the upper third in one. In two cases the break was transverse, and in one comminuted and compound. With the exception of Case 4 they were all treated with two broad splints and interosseous pads. The average duration of the treatment in five cases, not including Case 4, was a little over thirty-three days. The average period until the occurrence of firm union was thirty-six days in five cases. The longest period was fifty days, and the shortest twenty-six. There was no deformity in two cases, a little in one, and a good deal in another. The motions of the wrist, etc., were free in two, pretty good in one, and quite stiff in another.

Ribs—Number of Cases, 10.

Case 1.—W. C., aged 45, good constitution, intemperate, was admitted with fracture of the eighth, ninth, and tenth ribs, near their angle, caused, April 1st, by a severe blow on the part. No complication. A broad belt of adhesive plaster was placed tightly around his chest.

When he took his discharge in June, there was no union. He came in again late in July, and although he kept on the belt no union had occurred. While the belt was on he did not suffer any, but whenever it was removed he experienced severe pain in his side. He remained in some weeks longer, but no union occurred.

Case 2.—M. H., aged 70, good constitution, intemperate, was admitted for fracture of the second and third ribs, caused, Sept. 27th, by being run over by a carriage. Some emphysema of the cellular tissue of the right breast followed; but it soon disappeared. Same treatment as in the former case. Was discharged, cured, Oct. 30th.

Case 3.—A. M., aged 52, good constitution, was admitted Oct. 22d, for fracture of the ninth rib, near its middle, caused by a kick. The treatment the same as in the two former cases. The result is not known, as she left the hospital soon afterwards.

Case 4.—M. H., aged 40, good constitution, was admitted for fracture of the third and fourth ribs anteriorly, caused, Nov. 17th, by falling down stairs, striking on her side. Treatment same as in the other cases. Good union occurred before her discharge.

Case 5.—J. F., aged 46, good constitution, was admitted for separation of the third, fourth, and fifth ribs from their cartilages, and fracture of fourth and fifth ribs, near their middle, caused, Nov. 7th, by a fall from a height. Considerable emphysema of the cellular tissue around the injured joint followed. The patient was insensible, breathing heavily and at times stertorous. When spoken to he appeared to understand, but his answers to questions were incoherent. No other lesion except those mentioned could be discovered. A roller was passed around his chest to keep the fractured ribs quiet. Nov. 8th.—Was delirious at times last night. Skin hot, and the pulse full and strong. Twelve ounces of blood were taken from his arm. The patient fainted, but soon recovered, when his pulse was found to be less in force and frequency. The pulse having come up again, eight ounces more were taken one hour after the first bleeding. Nov. 9th.—The emphysema is still on the increase. The patient continues comatose. Nov. 10th.—Patient died.

Examination 24 hours after death.—Extensive emphysema over the injured side. The cartilages of the second and third ribs were fractured; the fourth and fifth ribs were broken in two places; the first break close by the cartilages, and the second six inches farther back. The sixth rib was found fractured and perforating the lung. The lung was compressed by the air that filled the pleural cavity. The uninjured lung was a good deal congested. A large quantity of clotted blood was found around the cerebellum, and on the anterior portion of the left lobe of the cerebrum.

Case 6.—G. E., aged 68, good constitution, was admitted for fracture of the seventh and eighth ribs in their anterior third, caused, Nov. 26th, by falling and striking his side against a stone. Was treated the same as Case 1. Good union resulted in about a month.

Case 7.—C. C., aged 45, good constitution, was admitted with fracture of the third, fourth, and eighth ribs, near their middle, caused by a fall down stairs. The treatment was the same as in the preceding case.

Some pneumonia followed. When discharged, Dec. 6th, the union was pretty firm.

Case 8.—W. G., aged 40, good constitution, was admitted for fracture of the sixth and seventh ribs, caused by falling down stairs, striking on his side, Dec. 2d. The dressing the same as in the last case. He took his discharge Dec. 31st. Union was progressing, and he was ordered to keep the belt on until he recovered.

Case 9.—W. B., good constitution, was admitted with fracture of the eighth rib, caused, Jan. 14th, by a blow on the part. A broad bandage was placed around his chest. He was discharged, well, Feb. 25th.

Case 10.—G. A., aged 59, good constitution, was admitted with fracture of the eighth rib, near its middle, caused, Feb. 21st, by striking her side on a curb stone. Treatment the same as in Case 1. Good union in four weeks.

Remarks.—Five out of nine cases were males, and four were females. In seven the violence was direct, indirect in one if not two, and probably a combination of both in another. The cartilages of the second and third ribs were fractured in one case. The second rib was broken in one instance, the third in three, the fourth in three, the fifth, in two places, in one, the sixth in two, the seventh in two, the eighth in five, the ninth in two, and the tenth in one. In six instances the fracture was anterior, in six near the middle, and in five near the angle. The least number of fractures in one individual, was one, and the greatest seven. Emphysema followed in two cases, and pneumonia in another.

In eight cases a broad piece of adhesive plaster was employed to restrain the movements of the chest, and in the remaining two a broad bandage or belt was used. In one case death resulted on the third day. The average duration of the treatment in the seven cases in which union occurred while in the hospital, was thirty-one days. In one case that was under my observation for four months, no union occurred; in another, union was going on when he took his discharge on the twenty-ninth day. In Case 3 the result is unknown.

Pelvis.—Number of Cases, 3.

Case 1.—P. N., æt. 50, good constitution, intemperate, was admitted for a fracture of the anterior superior spinous process of the ilium, July 13th, by a fall down stairs. The thigh was kept flexed upon the pelvis for four weeks. When discharged in the latter part of August the union was good, but some deformity remained.

Case 2.—P. R., æt. 45, good constitution, intemperate, was admitted for a fracture of the ilium, extending from the anterior inferior spinous process to a point on the crest of the ilium, fully two inches posterior to the anterior superior spinous process, caused, Nov. 14th, by falling down twenty steps of a stair. The thigh was kept flexed, and a belt of adhesive plaster was placed around the pelvis. Was discharged, well, Dec. 14th.

Case 3.—J. M. G., æt. 60, feeble constitution, was admitted Jan. 23d, for comminuted fracture of the pelvis, caused by a fall from a second story window on the 16th. She was so feeble when admitted that a thorough examination was not made. It was supposed that the neck of the thigh bone was broken, as there was eversion of the foot and one quarter of an inch shortening. She was put upon stimulants, etc., and her limb placed in an easy position. She continued sinking after her admission until the morning of the 25th, when she died. On *post mortem* examination the anterior superior spinous process was found more forward than its fellow, and there was distinct crepitus felt on rotating the thigh. A fracture was found extending through the acetabulum, and the head of the femur wedged in between the fractured surfaces. A deep rough groove was found in the head of the bone, caused by one of the broken edges of the acetabulum. The rami of the pubis and ischium were found broken on both sides. A fracture extended through the ilium, near the right sacro-iliac synchondrosis. There was considerable blood extravasated into the cellular tissue, and there was evidence of recent peritonitis in this side of the abdomen.

Remarks.—Of these three cases two were males and one was a female. The fracture was confined to the right side in two cases, and in the third the left side was also involved. They were all the result of direct violence. In one the anterior superior spinous process alone was knocked off, in one a considerable portion of the upper and anterior angle was broken off, and in another all the bones except the sacrum were involved. The double inclined plane was employed in two of the cases, and rest, etc., in the other. The mean duration of treatment in the two first cases was about twenty-six days. The third case died on the morning of the tenth day. Good bony union, very little deformity, and free use of the limb resulted in two of the cases.

Femur—Number of Cases, 27.

Case 1.—W. R., æt. 60, good constitution, was admitted with impacted fracture of the neck of the thigh-bone, caused, March 16th, by striking forcibly his hip against a curb-stone. The impaction continued until the 29th, when all the symptoms of fracture became evident. A long splint with a right angular piece at its lower part was placed on the sound side, and the foot of the injured limb secured to the right angular piece. April 25th.—No union as yet. The splint was removed and the limb supported by pillows, etc. May 11th.—Commenced to move about on crutches. When discharged, May 24th, he had pretty good use of his thigh, and could manage to get about pretty well with the assistance of crutches.

Case 2.—B. D., æt. 25, robust constitution, was admitted with a fracture of the shaft of the femur, at the juncture of the lower with the middle third, caused, April 10th, by being crushed in a bank of earth. The long splint was used, making extension by means of the loop of adhesive strip secured to the leg and lower part of the thigh, and counter-extension by means of the perineal pad. May 19th.—The dressings were dispensed with as the union was good. One eighth of an inch of shortening resulted.

Case 3.—T. L., æt. 36, good constitution, was admitted with fracture of the shaft at the junction of the middle with the lower third, attended with an inch and a half of shortening, caused April 10th. The long splint was applied as in the former case, and when it was removed, May 12th, the union was pretty good. There was a half-inch of shortening when he was discharged well, June 12th. He did not limp.

Case 4.—N. B., æt. 40, good constitution, was admitted with oblique fracture in the lower third of the shaft, attended with one inch of shortening, caused April 13th. The long splint, etc., applied on the 17th, and removed May 24th, as firm union had taken place in the meantime. When discharged, June 16th, there was hardly any perceptible shortening, and use of the limb was very good.

Case 5.—M. L., æt. 56, good constitution, was admitted with an oblique fracture at the junction of the lower and middle thirds of the shaft, attended with over an inch and a half of shortening, caused, May 15th, by falling down stairs and striking on his thigh. The starch apparatus was applied to the thigh in three days, and extension made on the limb by means of a weight attached to the loop, adhesive plaster under the foot, pulling over the foot rail of the bed. The counter-extension was made by the weight of the body. May 20th. The starch apparatus had to be tightened. There was only a half-inch of shortening at this time. July 2d. Extension discontinued, as firm union had occurred. When discharged, July 10th, the limb was from one-eighth to one-quarter of an inch longer than the opposite one. With the exception of a little stiffness in the hamstring muscles, the use of the limb was very good.

Case 6.—J. O. H., æt. 57, delicate constitution, a shoemaker by occupation, slightly intemperate in his habits, was admitted May 23d, for fracture of the cervix femoris, caused three days previously, by falling down stairs and striking the postero-lateral portion of his trochanter major against the projecting edge of one of the steps. The following symptoms were present, namely, over one inch of shortening of the left limb, eversion of the foot, inability to move the leg or thigh, and well marked osseous crepitus when the limb was extended to its full length, and rotation made while pressing firmly on the trochanter. This case was examined by several surgeons, and all of them pronounced it fracture of the cervix.

The limb was placed in an easy position for the first three days after admission, and then it was secured to the ordinary straight splint as in Case 2. The extension was increased from day to day, by means of the screw in foot-board until May 30th, when the perineal pad had galled him so much that this splint had to be removed and Dr. Burge's substituted. There are three-quarters of an inch of shortening at this time. June 24th. As the bandages were loosening, and as the adhesive plaster was slipping from the limb, it was re-dressed. There was now only a half-inch of shortening, and it was doubtful whether any union had taken place yet, for but very little examination was made that had reference to this point. It was the impression, however, that union had not occurred. He went on doing well from this time until July 19th, when the apparatus was dispensed with. A pretty careful, though not very thorough, examination was made, and the opinion was in favor of union. Having complained of considerable pain in the joint a blister was placed between the trochanter and tuberosity of the ischium. July 20th. He says his hip feels better and he can move the leg and thigh more freely. He was blistered occasionally around the joint for the pain, which was better sometimes and worse at others. The limb increased in strength so that he could push himself up in bed by placing the foot on the foot-rail and extending the leg on the thigh. He never was able to walk about, although he could bear his weight n this side when desired to do so.

August 19th.—He was attacked with acute bronchitis, which yielded to appropriate treatment. Soon after this, it was found that the tubercles in his lungs were beginning to undergo softening. A few months previous to his death he began to run down very fast.

He died January 23d, just eight months and three days after the date of the fracture. An examination was made eleven hours after death, and the upper third of the thigh-bone removed. On sawing horizontally through the head, neck, and trochanter, perfect osseous union was found, and the line of fracture, in my opinion, was wholly within the fibrous capsule. It was evident from the appearance of the capsule that it had been pretty freely lacerated at the time of the injury from the nature and extent of the adhesions. The specimen has been kept for the Bellevue Pathological Museum.

Case 7.—W. M., æt. 74, good constitution, by no means feeble for his age, was admitted for fracture of the cervix femoris, caused July 12th, by falling down stairs and striking on his hip. The following symptoms were present, namely, one quarter of an inch of shortening, strong eversion of the foot, and inability to move the limb. On rotating the thigh the trochanter did not merely roll under the hand, but described an arc of a circle. The crepitus was very slight, and could only be got occasionally. On making extension on the limb, it could be brought down to its full length. The fracture was diagnosticated to be intracapsular at the time. No treatment further than leaving the limb at rest, was adopted. On the morning of July 18th, two hours and a half after eating a hearty breakfast, he suddenly became ill and died in fifteen minutes. When I saw him, which was about five minutes after his death, the veins of the face and neck were quite turgid. On post-mortem examination, twenty-four hours afterwards, the sinews and muscles of the brain were found gorged with venous blood. There were about four ounces of serum under the arachnoid membrane. On examining the hip joint, the capsular ligament was found pretty extensively lacerated on its upper anterior portion. The round ligament was intact, and a little larger than natural. On disarticulating the bone, no fluid could be found within the capsule. The neck of the bone was fractured obliquely, close by the head, and again transversely near the trochanter. Between the head and that portion of the neck still in communion with the shaft, was found a wedge-shaped piece of bone. The fractures were all entirely within the synovial capsule, and although they extended through the whole thickness of the bone, and rode by each other slightly, the pieces were all connected to the remains of the cervix by means of several small bands of periosteum, etc., from a quarter to a third of an inch wide on the upper semicircumference of the neck and head.

Case 8.—M. G., æt. 64, delicate constitution, was admitted with an oblique fracture of the shaft of the femur near the junction of the upper and middle thirds, attended with over an inch of shortening, caused, July 28th, by falling down stairs. The dressings were the same as case five, but she did not keep her body well up in bed, and hence there was but very little extension, for part of the time at least. Sept. 28, the extension was let up as the union was firm. When discharged, Oct. 22nd, there was nearly a half inch of shortening, but she did not walk lame in consequence.

Case 9.—E. D., æt. 21, good constitution, was admitted with fracture of the femur, just above the condyles, caused June 30th, by falling down stairs. Synovitis of the knee joint followed, but it soon subsided under proper treatment. The fracture was treated by keeping the limb on a double inclined plane until August 12th. The stiffness of the joint remaining after the removal of the splint, was relieved by passive motion, friction, showering, etc. When discharged, Sept. 15th, he had pretty good use of the limb.

Case 10.—M. B., æt. 40, good constitution, was admitted for fracture of the shaft of the femur at the junction of the lower and middle thirds, attended with one inch of shortening, caused, June 17th, by falling ten feet. The treatment was the same as in Case 2. When the splint was removed, August 1st, there was good union and no shortening, and free use of the limb. He was discharged well August 16th.

Case 11.—H. S., æt. 14, good constitution, was admitted with an oblique fracture of the femur just below the trochanter, caused, July 6th, by falling from a tree and striking on his thigh. Was treated the same as case 2. August 16th the union was good, and there was no deformity except a half inch of shortening.

Case 12.—J. P. æt. 41, good constitution, was admitted with a nearly transverse fracture of the shaft in its middle third, caused, Aug. 24th, by a fall on the side-walk while in an epileptic convulsion. Was treated the same as Case 2. When the splint was removed, Sept. 20th, the union was good, and there was no other deformity than three quarters of an inch of shortening.

Case 13.—M. B., æt. 44, constitution tainted with syphilis, was admitted for fracture of the neck of the femur, caused, Aug. 31st, by twisting on her foot and falling. There were three quarters of an inch of shortening, and the foot was everted. The reatment was the same as in the preceding cases. When discharged, Nov. 6th, there were still three quarters of an inch of shortening, but there appeared to be union.

Case 14.—G. D., æt. 27, good constitution, was admitted with a compound complicated fracture of the lower part of the shaft, caused, Aug. 21st, by being struck with a piece of a rock from a blast. There was a lacerated wound six inches long that communicated with the knee joint, and in its upper part the bone could be felt to be comminuted. Very free hemorrhage, that could only be checked by pressure on the femoral artery, issued from this wound. He was very much prostrated, and died at 9.30, P.M. No autopsy could be obtained.

Case 15.—T. L., æt. 35, was admitted with fracture at the junction of the upper and middle thirds, caused, Aug. 16th, by a fall from a building. He suffered from delirium tremens for six days after the accident. The limb was kept on a double inclined plane for a month, and when discharged soon afterwards, there was half an inch of shortening.

Case 16.—W. R., aged 8, good constitution, was admitted with fracture of the shaft at the junction of the upper and middle thirds, caused, Sept. 2nd, by getting his thigh caught between two rolling logs. Was treated in the ordinary straight splint for two weeks, and then in a splint like that employed in Case 1. There was perfect union, and only a quarter of an inch of shortening when he was discharged, Nov. 6th.

Case 17.—M. B., æt. 30, pretty good constitution, temperate, was admitted for a compound oblique fracture of the femur at the junction of the upper with the middle third of the shaft, caused, Sept. 24th, by falling from a third story window, striking her thigh on an awning post in her descent. Thr wound, though not larger than a half dollar piece was very deep, and extended to the point of fracture. It was about the middle of the outer aspect of the thigh. The scalp on her forehead was, together with the pericranium, extensively torn up from the bone. Sept. 25th.—As her general condition was a great deal better, a starch bandage was applied to the thigh. There was an opening left in the dressing opposite the wound. The limb was fully two inches shorter than it should be. Extension was made as in Case 5. The wound began to discharge pus very freely. Oct. 4th.—She was attacked with symptoms of encephalitis, and was put upon a moderate antiphlogistic course of treatment, and recovered in a few days. She remained quite weak after this attack. The extension had to be let up for about a week in consequence. Oct. 14th.—Notwithstanding the large size of the opening left in the starch apparatus for the escape of the discharges it became so thoroughly saturated with them that it had to be removed and moulded wooden coaptating splints substituted. Slight extension was still kept up by means of the weight. Shortly after the first of December all the discharge ceased, and the sinus began to heal up by granulation. Dec. 28th, pretty firm union was found, but this limb was nearly an inch shorter than its fellow. A starch apparatus was applied and she was discharged at her own request. She was ordered to bear no weight on the limb for at least a month, in order to avoid any further shortening.

Case 18.—G. B., aged 60, was admitted with a fracture of the cervix femoris, caused, Sept. 9th, by striking her foot against some obstruction, and falling on her hip. The treatment was the same as in Case 2. When discharged, Nov. 5th, there was one quarter of an inch of shortening, and pretty good union.

Case 19.—J. S., aged 12, good constitution, was admitted with transverse fracture of the shaft of the femur, in its middle, caused, Oct.

8th, by a jump from a height. The treatment was the same as in the preceding case. When the splint, etc., were removed, good union, and only one quarter of an inch of shortening were found.

Case 20.—D. O. B., aged 19, good constitution, was admitted with oblique fracture of the shaft, at the junction of the upper and middle thirds, caused, Oct. 28th, by falling four stories through a hatchway. There was one inch and a half of shortening. The treatment was the same as in Case 2. The perineal pad had to be dispensed with Nov. 29th, and counter-extension made from the axilla. When discharged, Feb. 4th, the union was firm, and he did not walk lame, although there was a quarter of an inch shortening.

Case 21.—P. R., aged 55, good constitution, was admitted for oblique fracture in the middle third of the shaft, caused, Oct. 15th, by being knocked down and walked upon. The straight splint, etc., were applied until Nov. 28th, at which time union was completed. When discharged, well, Dec. 15th, there was less than a quarter of an inch of shortening.

Case 22.—E. F., aged 8, good constitution, was admitted for fracture of the shaft at the junction of the upper with the middle third, caused, Oct. 6th, by a fall from a height on the thigh. The same kind of dressings as in Case 2 were applied Oct. 9th, and removed Nov. 9th, when union was found to be perfect. Was discharged, Jan. 4th, well. There was only one-eighth of an inch of shortening.

Case 23.—H. P., aged 9, good constitution, was admitted with fracture of the femur, just above the condyles, caused, Nov. 17th, by being struck with a heavy weight over the knee, and bending under it. The long splint, was applied Nov. 22d, and removed Dec. 18th. The union was pretty firm, and no shortening could be detected.

Case 24.—F. M. J., aged 30, scrofulous, was admitted for double fracture of the shaft, in its middle third, caused, Nov. 17th, by being struck with the cow-catcher of a locomotive. The fractures were only three inches apart. There was an inch and a half of shortening. The limb was kept on a double inclined plane for the first eight days, and afterwards was secured to the straight splint, as in Case 2. When discharged, Jan. 17th, the union was good, the use of the limb pretty fair, and only a half inch of shortening.

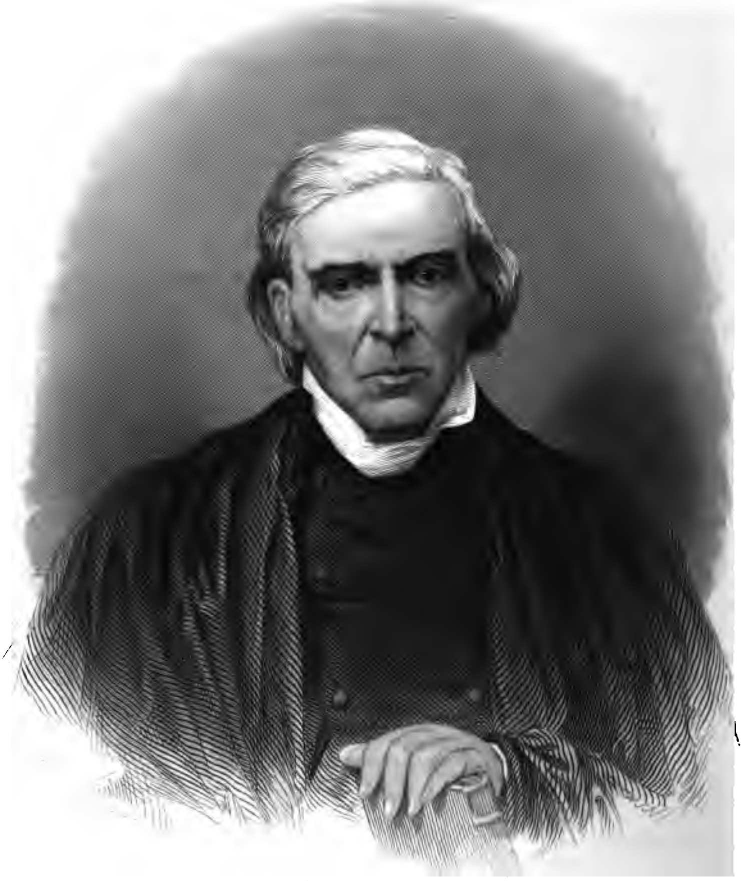
Case 25.—E. S., aged 50, feeble health, was admitted for impacted fracture of the neck of the femur, caused, Jan. 24th, by falling and striking on his hip. The long splint, etc., were applied, Feb. 2d, but the perineal pad galled him so much that all local treatment had to be abandoned in a week, on account of the feeble condition of his general health. He died May 1st, and a post-mortem examination was made. No union had taken place. The neck of the bone was absorbed, and the acetabulum was nearly perforated by ulceration. The innominatum was extensively necrosed.

Case 26.—S. P., aged 48, good constitution, was admitted for transverse refracture of the shaft of the femur, at the junction of the upper and middle thirds, caused, Jan. 1st (just ten weeks after the first fracture), by falling down stairs. He was treated on the straight splint, etc. The result is not stated.

Case 27.—P. K., aged 14, good constitution, was admitted with oblique fracture, extending through the external condyle, separating the internal from the shaft, caused, Feb. 5th, by a heavy stone striking on his knees, and crushing him under it. He also sustained rupture of the ligament of the patella, and of the crucial and internal lateral ligaments of the opposite knee. Pretty severe inflammation of the parts about this knee, attended with suppuration, followed. This limb was confined to a straight splint, to prevent the knee from bowing inwards too much, and the other (the fractured one) was placed on a double inclined plane. Union of the fracture, with considerable deformity and stiffness of the joints, followed. Union occurred in five weeks. The opposite knee bows in considerable.

Remarks.—Of the twenty-six cases in which the sex is mentioned, twenty-two were males and four were females. In the ten cases in which the side was noted, five were on the right and five on the left. Sixteen were the result of direct violence, either at the point of fracture or in its immediate vicinity, and nine were the result of indirect violence. Of the six cases of fracture of the neck, two were within the capsule, one of which united by bone, and two were impacted, in one of which the impaction continued thirteen days. Of the twenty cases in which the fracture was in the shaft, one was just below the trochanters, nine at the junction of the upper and middle thirds, four in the middle third, two at the junction of the middle with the lower third, and four in the lower third, two of which were immediately above the condyles. There was one case of fracture through the condyles. In eleven cases, in which the direction of the break is mentioned, eight were oblique, and three transverse. There was one case of comminuted fracture, one of compound, and one of compound complicated. Hagedorn's splint was employed in two cases, Desault's in fifteen, the starch bandage with extension in three, the double inclined plane in three, Dr. Burge's apparatus in one, and simply rest in an easy position in the remainder. Three of the patients died before union occurred. The average duration of treatment for those that recovered was nearly fifty days. The shortest period was twenty-seven days, and the longest ninety-six. The average period after the date of the fracture until union occurred, in sixteen cases, was nearly forty-five days. The longest time was ninety-six, and the shortest twenty-eight days. The average period until fourteen of the patients were fit to be discharged was about seventy-two days. The longest time ninety-nine, and the shortest fifty-six days. In the twenty-one cases in which the union was good, the limb was from an eighth to a quarter of an inch longer in one case, in two there was no shortening, in one there was hardly any, in two there was an eighth of an inch, in five a quarter of an inch, in six a half an inch, in one three quarters of an inch, and in another nearly an inch. In the ten cases in which a note is made of the lameness, five escaped without any, while five had more or less.

(*To be continued.*)



Burt, sc.

Martyn Paine.

A.M. M.D. LL.D. AND F.R.C.P.

Corresponding Member of the Royal Verein für Heilkunde in Preussen, of the Gesellschaft für Natur und Heilkunde zu Dresden, Member of the Medical Society of Leipsic, of the Medical Society of Sweden and of other learned Societies.

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PART SECOND

CRITICAL ANALYSIS.

Art. VII.—*The Institutes of Medicine.* By **Martyn Paine,** A.M., M.D., LL.D.; Prof. of the Institutes of Medicine and Materia Medica in the University of the City of New York, etc., etc. Fourth Edition, 8vo., 1858, pp. 1095 ; Harper & Brothers, Franklin Square, New York.

The work before us is one of no ordinary merit ; it is full of learning and philosophy ; and the reader, whilst impressed with the profound erudition of the author, cannot but be amazed at the amount of labor the book discloses. We should be most happy to enter upon a critical review of its contents—but this, under existing circumstances, we cannot do ; and, therefore, must limit ourselves to a general outline of its objects.

In this work, the author has in view one leading purpose—the exposition of the great principles of medical science. He commences with the composition of organic beings, advancing successively to their structure, the properties with which they are endowed, and finally to their functions. This may be said to constitute the groundwork for the subsequent parts of the treatise, which consist of Pathology and Therapeutics in their varied relations. In the Appendix there will be found an extremely interesting disquisition regarding the physiological demonstration of the substantive existence and self-acting nature of the soul and instinctive principle, together with other questions connected with some of the most recondite topics in the philosophy of medicine.

Prof. Paine occupies no equivocal position in his teachings ; on the contrary, he is found "*primus inter pares*" in the school of vital solidism, as is fully shown in the work before us, in his medical and physiological commentaries, and in his numerous other writings. He is, at the present day, one of the most uncompromising advocates of the great principle inculcated by Hippocrates himself, and subsequently elaborated by Glisson, Baglivi, Pacchioni, Sauvages, and others of no less distinction. There is no doubt that our author is in the minority in the great problems which he undertakes to sustain. Solidism is too ancient a theory for this age of progress, and it has, therefore, been obliged to give way to what are deemed the more fascinating opinions of the modern schools. It is for this reason more particularly that we accord to our author the full tribute of our personal admiration. He is engaged in a struggle for truth; his mind is concentrated upon the elimination of facts, and in the pursuit of what he deems right, he is utterly indifferent to current opinions ; he seeks not the applause of his contemporaries ; he knows full well that principles must and will survive the disputations of the controversialist. His successors are to be the judges of the soundness of his doctrines; and to their judgment, it would seem, he is willing to submit the issue. If we do not misapprehend our author, we think we may apply to him with striking propriety the following lines of Horace :

> "Neque, te ut miretur turba labores,
> Contentus paucis lectoribus."—(Sat. x. lib. i.)

There is one peculiar feature in the work before us—and that is, the unbroken and admirable consistency which pervades it. We have failed, after an attentive and critical examination, to detect any conflicting opinions ; but, on the contrary, so far as the teachings go, they present one harmonious whole. This, in a work intended to cover the entire field of medicine, is a remarkable circumstance, and is, as the author justly supposes, *primâ facie*, a proof that his philosophy is founded in nature.

In the strictly physiological part of the *Institutes*, Prof. Paine first deduces the peculiar properties and laws of organic beings from their elementary composition, and from the union of the elements with organic compounds. He has also a special argument to the same effect founded upon the stability of nitrogen gas during life, and the part it assumes in decomposition after death, especially in the case of animals ; and he pursues the same inquiry in the developmental history of the ovum, where he finds displayed " the whole philosophy of organic life on the principles through which the actions of life are forever carried on ;" he seeks here, also, for the essential philosophy of disease.

We come next to structure, and under this division the various tissues are considered elaborately in connection with their being the seats of morbid action. This practical consideration of the subject leads our author to a minute exposition of the peculiar endowments of the different tissues, making, as it were, the basis of much that is most important in those departments of his work which treat of Pathology and Therapeutics.

Then follows a learned inquiry into the properties of life, among the most important of which is irritability, common to animals and plants, and the nervous power and sensibility peculiar to animals. Much of our author's philosophy as to the modus operandi of morbific and remedial agents, turns especially upon the last two of the foregoing properties. These he enlists, both in his Institutes and medical and physiological commentaries, in interpreting the effects of remedies and morbific causes beyond the seat of their direct action, and in accordance with the well settled physiological laws of reflex influence. Besides the usual distinction of sensibility into common and specific, he makes a third, which is denominated "*sympathetic* sensibility." It is this last which serves as the medium of transmitting impressions to the nervous centres in the function of reflex action, the nervous power being the efficient cause by which that action is consummated ; though it should be said that he is indifferent as to the name by which this power or influence should be designated.

Passing next to our author's fourth division of Physiology, to the Functions, we find their investigation occupies about two hundred and fifty pages; and here he brings to bear with their whole force his preceding doctrines of life, and makes tributary those numerous facts which relate to digestion, secretion, animal heat, etc. In this portion of the work complete elaboration is given to digestion, circulation, calorification, and the laws of the nervous system. The exposition of the last, or laws of reflex action, is constantly applied by our author to problems in pathology and therapeutics.

Prof. Paine observes with much truth in his "Rights of Authors," which appears in the Appendix to the Institutes, "the application of the physiological laws of the nervous system, or laws of reflex action, pervades the Institutes, and constitutes the life and soul of the work."

As preliminary to the practical parts of our author's work, there follows his exposition of the Functions, an inquiry into the philosophy of "vital habit," the physiological conditions of the principal stages of life, an analysis of the temperaments, races of mankind, sex, climate, habits and usages, relations of organic beings to external objects, and death, all of which are considered in their relations to pathology and therapeutics.

Passing over a variety of subordinate topics of great interest in medicine, Prof. Paine presents us with the division of his work which relates to pathology; and here again we are impressed with his consistency in making his physiology the fixed and undeviating basis of his pathology; and he appears to have been thus conducted along, without an aberration which we have been enabled to detect, by an ever present conviction of the consistency and truthfulness of nature.

In this rapid sketch we have only opportunity for stating some of the topics embraced under this division. The important subject of the remote causes of disease, predisposing and exciting, are fully considered; and as a natural sequence, the pathological and proximate cause follows next; and here, as in the discussion of the remote causes, the laws of reflex action form the main elements of our author's philosophy.

Next in order, we are presented with a general and analytical view of the symptoms of disease, and a disquisition upon morbid anatomy as contributing to the same object, though comparatively of inferior merit. He then passes to the group of diseases comprehended under the general denomination of Inflammation, and after a full analysis of their remote and pathological causes, he takes up the subject of fever in a corresponding manner, indicating the various characteristic distinctions between the two genera. The interesting topic of venous congestion, to which our author has devoted more than four hundred pages of his Commentaries, is next disposed of in thirteen of the Institutes, though resumed in the article on blood-letting for the purpose of elucidating the treatment.

A critical examination of all the essential points in the Humoral

Pathology, and a substitution of his doctrines of reflex action as it respects both the pathology and treatment, concludes the pathological division of the work.

The whole field of general therapeutics is then laid out before us, and many distinct articles of the materia medica are ultimately brought forward for the purpose of illustrating their virtues, and sustaining our author's conclusions as to the modus operandi of remedies through alterative influences of reflex action. Remedies of positive virtues are on common ground with the causes of disease as regards the changes which they introduce, with the difference that the former substitute pathological conditions that are less profoundly morbid than such as are produced by the latter, and with a disposition to subside spontaneously. The recuperative tendency of nature lies, therefore, at the foundation of this part of Prof. Paine's philosophy; and the nervous influence variously modified, according to the nature of the agent, is the principal medium through which the artificial changes are brought about.

A condensed view is then presented of our Author's doctrines of the *modus operandi* of remedies through alterative influences of reflex action, in the course of which a great variety of illustrations is afforded. The example of the Seton is made to supply the whole philosophy of the operation of remedial and morbific agents.

The subject of Therapeutics is concluded by a copious analysis of the action of blood-letting, and here, too, the entire philosophy is made to depend upon reflected influences of the nervous system. A critical distinction is drawn between general blood-letting, leeching, and cupping, and the essay abounds with practical applications of this great remedy, and with citations of the experience of the most eminent medical philosophers from the days of Hippocrates to the present era.

This brief sketch concludes the work as published originally, and which, as the Author says, in his Preface, he has seen no reason to modify either in its facts or its principles, and, therefore, leaves it without change. But to the present edition he has affixed an appendix of about one hundred and forty pages, and extended the Index to one hundred and seventy-four. In the Appendix, he discusses "The progress of physiological and pathological chemistry;" "The production of animal sugar;" "The progress of physiology;" "Absorption and circulation in plants;" "Experiments to ascertain whether the quantity of blood circulating in the brain may be reduced artificially;" "The uses and mode of action of sedatives;" "The action of chloroform and analogous agents in producing insensibility when inhaled;" "The influence of the mind upon the action of remedial agents;" "Whether diseases have undergone changes of type within the last forty years;" "The physiology of the soul and instinct;" and lastly, A defence of the "Rights of Authors."

We commend to the attention of the reader this Appendix—he will find in it much to interest and instruct him; and more especially do we suggest a careful perusal of the article on the "Soul and Instinctive Principle," which was published originally in the year 1848, and is now condensed from a volume of 170 duodecimo pages into about 40 octavo. The Author attempts, in this Essay, to prove the substantive existence and self-acting nature of both principles, and distinguishes them from each other. His demonstrations are essentially dependent upon the phenomena supplied by reflex action of the nervous system, although the excito-motory system of nerves forms the principal groundwork; and reflective actions through the agency of both orders of nerves are corroborating analogies. To appreciate the learning displayed in the discussion of this great and fundamental topic, the Essay must be attentively read; and it will amply repay perusal.

Lastly we may be permitted to say that the article on the "Rights of Authors" has been elicited, by what Prof. Paine deemed an infringement upon his claims; and he has entered upon the subject not only with zeal, but, in the language of the law, he has made out his case by a chain, to say the least, of very positive evidence. He has incorporated this monograph in his Institutes to await the verdict not only of his contemporaries, but of posterity, and this is *primâ facie* proof of our Author's deep convictions that he has sustained his point, and shown that a wrong has been done him. The new Index is an elaborate analysis of the whole work, and is so written, that, like the work itself, it may be studied. Its characteristic is comprehensiveness.

When we look analytically at the work before us, together with the medical and physiological commentaries, and the numerous other writings of our Author, we are amazed at the amount of labor he has achieved, and the extent and varied character of his learning. He is, in every sense of the word, a medical philosopher—a devotee to science—and a commentator, whose opinions will not only pass to posterity, but receive the high tribute to which they are entitled. Inflexible in his convictions of truth, he cannot be moved by friend or foe—and he pursues his onward course with an earnestness and zeal characteristic of the man. It can scarcely be supposed that there are not many points of difference between our Author and the writer regarding the numerous questions involved in his teachings—but these yield to the profound respect we entertain for him, not only as a man of high moral worth and unusual erudition, but for the marked consistency which pervades his views.

We have no hesitation in stating that, in our opinion, the work before us will not only confer honor on our country, but will place Prof. Paine in the first rank of medical philosophers. Whatever may be thought of his vital solidism, and how much *savans* may be disposed to dissent from some of his positions, yet justice will award to him a high place among those, whose lives have been devoted to scholastic lore, and the interpretation of the fundamental laws of nature.

Rarely do we find an author in our profession so thoroughly familiar with the opinions of his predecessors; from the earliest dawn of our science to the present period, he is perfectly *au courant;* and what is also worthy of note is the classic taste developed in the style of the book. Whilst the work bears on every page the impress of a strictly logical mind, it also discloses a just appreciation of the elegances and refinements of composition—a feature not always prominent in the writings of medical men.

In conclusion, we can confidently recommend the Institutes both to the practitioner and student of medicine—to the former, it will be a rich treat—it will open to him the wide and fruitful field of medical science, and he will see elaborated in it the great and leading questions, which have so long constituted the basis of controversy among the learned in our profession. The student will find it a treasury of knowledge—a veritable encyclopædia, full of the prominent facts of his science; and its tendency, moreover, will be to induct him into habits of thought and reflection.

BIBLIOGRAPHICAL NOTICES.

Art. VIII.—*The Medical Student's Vade Mecum. A Compendium of Anatomy, Physiology, Chemistry, Poisons, Materia Medica, Pharmacy, Surgery, Obstetrics, Practice of Medicine,* etc., etc. By George Mendenhall, M.D., Prof. of Obstetrics and Diseases of Women and Children, in the Medical College of Ohio, etc., etc. Fifth edition, revised and greatly enlarged, with two hundred and twenty-four illustrations. Philadelphia: Lindsay & Blakiston, 1857.

This manual has proved to be popular with students, and is evidently well adapted to their uses. The fifth edition has been carefully revised, and is now one of the best works of the kind yet published.

Art. IX.—*Plates Illustrative of Wilson on Diseases of the Skin.* Fourth edition. Philadelphia: Blanchard & Lea, 1857.

There has long been in this country a serious want of an illustrated work on the diseases of the skin. To this perhaps more than to any other cause must we refer the general neglect by practitioners, of this class of affections. Within a recent period, this desideratum in medical literature has been supplied by the liberal publishers of the present volume, first by the issue of *Neligan's Atlas of Cutaneous Diseases,* and now of Wilson's Plates, both being in a cheap and most convenient form. We recommend these works to the profession, in the belief that they will greatly facilitate the study of the diseases of the skin.

PART THIRD.

MEDICAL RETROSPECT.

Report on the Progress of Infantile Pathology and Therapeutics; prepared for the NEW YORK JOURNAL OF MEDICINE. By A. JACOBI, M.D., Physician to the Children's Department of the (Canal street) German Dispensary of the City of New York.

I. DISEASES OF THE DIGESTIVE ORGANS.

1. *Glossitis.*—Joseph Bierbaum publishes a very elaborate article on both superficial and parenchymatous inflammation of the tongue, of which the following are the main facts: 1st. Superficial glossitis is of very little importance, and very common too; but parenchymatous glossitis is as grave a disease as it is rare. 2d. Parenchymatous glossitis is sometimes unilateral, sometimes bilateral, and is either acute or chronic. 3d. Acute glossitis is not always accompanied by inflammatory fever, although the disease be grave; sometimes the fever is decidedly asthenic. 4th. The symptoms of glossitis in children are the same as in adults; therefore a mistake is impossible. 5th. The acute form of the disease ends sometimes in suppuration, very seldom in gangrene. Chronic glossitis, when in a dyscrasic infant, may undergo a cancerous degeneration. 6th. Predisposition cannot be proved; frequently there is even no occasional cause of the disease to be found. Glossitis, by mechanical, chemical, or mercurial influence, is easily discernible. Glossitis has scarcely ever been epidemical. 7th. Dangerous though it be, it is not so much as has often been believed. Sometimes suffocation, sometimes imminent apoplexy, prove to be most dangerous. 8th. The nitrate of soda is preferable to any of the other internal medicaments. Rigorous antiphlogistics, particularly venesection, is wholesome only where there is a high inflammatory fever. Local bleeding cannot always be dispensed with. Tepid emollient gargles are apt to soothe the patient, and support the convalescence. Where no time must be lost, and the other treatment avails nothing, large incision of the tongue proves instantly successful. Clysters frequently prove useful.—*Journal für Kinderkrankheiten*, Nov. and Dec. 1857, p. 352.

2. *Pepsine as Stomachicum.*—In one of the Children's Hospitals of Vienna numerous experiments have been made as to the efficacy of this much praised remedy. The reporter says that the experiments do not prove, hitherto, any healing effect of the pepsine, given pure and as powder, in dyspepsia of children and its consecutive sufferings. Neither does "pepsine whey"* seem to be promising of much more effect; the results

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* Milk coagulates readily in a temperature of about 100° F., after being mixed

of the observations made on this preparation may be comprehended in the following: 1st. Older children (of from 3 to 6 years), and such as did not keep in bed, tolerated pepsine whey pretty well, and relished it somewhat; their appetite appeared not to be diminished. Younger children, and such as were kept in their beds, threw it up again, even when given in smaller doses. When such was the case, the children did not want to take it again. 2d. Such of the whey as had a manifest nauseous taste after the preparation, was usually brought up again. 3d. Convalescence appeared not to be aided, in any remarkable degree, by the use of pepsine whey. 4th. It was generally less relished and tolerated with more difficulty, than cow-milk. 5th. Such a healing effect, as is sometimes seen and usually expected from drinking whey, in bronchial catarrh, particularly in the progress of tuberculosis, could not be observed. 6th. Nevertheless, if there ever is an indication for the use of whey in diseases of children, the pepsine whey, prepared without the nauseous taste of the drug, will likely be found more wholesome than the common *serum lactis. Jahrbuch für Kinderheilkunde und physische Erziehung*, 1858, iii. 172.

3. *Diarrhœa in the first year of life.*—Calomel, $\frac{1}{6}$ grain every third hour, is a remedy, where there is no fever, in the diarrhœa of infants under one year of age. Such is the experience of Dr. Schuller, of Vienna, in regard to infants, who are, or have been, nourished by breast-milk; experience in hospitals, on children artificially fed, gave a negative result. Calomel has the curing effect, which has just been stated, only when the diarrhœa is beginning. If it has not been successful in stopping diarrhœa within 24 or 48 hours, it is of no use, and has to be discontinued. Vomiting, while calomel is given, yields no contra-indication. *Jahrbuch für Kinderheilkunde und physische Erziehung*, 1858, iii. 164.

4. *Raw beef in the "diarrhœa ablactatorum."*—Seventeen years ago, J. F. Weisse, physician of the Children's Hospital of St. Petersburgh, recommended for the first time raw beef, scraped, as the best remedy against the diarrhœa setting in after weaning. He repeats his recommendation as warmly now, as it has been given in former years, referring to his own experience and the approval of a great many well-known observers. It is a remarkable fact, and worthy of being communicated, that many of the children cured by the use of raw beef, had subsequently tænia solium, which is not usually found at St. Petersburgh, but which, according to D. von Siebold (*On Nematodes and Cystici*, Leipsic, 1854) is introduced into the Russian capital by Podolian oxen. *Journal für Kinderkrankheiten*, Jan. and Febr., 1858, p. 60.

5. *Strangulated hernia in children.*—Dr. G. A. Otis, of Springfield, Mass., gives a compilation of 40 cases of strangulated hernia in children, the results of which he sums up by the following conclusions: 1. Strangulation seldom occurs in the hernia of childhood, and only in the inguinal variety. 2. The taxis is more frequently successful, in proportion, than in adults. The auxiliary measures should be limited to chloroform, opium, the warm bath, and cold to the tumor. 3. If it is impos-

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with some grains of pepsine. The milk thus coagulated is given after having slightly percolated, and, therefore, ought not to be named whey.

sible to reduce the bowel, the progress of the symptoms is more rapid than in adults. If you temporize and postpone in children's cases, you will be too late. 4. The mortality after herniotomy in children is less than in adults. Where the operation is seasonably practised, success is almost uniform. 5. The extra-peritoneal operation is preferable, when not counter-indicated.—*The Virginia Medical Journal*, March, 1858, p. 201.

6. *Atresia recti.*—Dr. Berend reports, in the *Annales de la Société médico-chirurgicale de Bruges*, 3 cases of atresia ani, on which he operated in one year. 1. Atresia ani, vaginæ, urethræ. Child died in the night following the operation. 2. Atresia ani, vaginæ. Child died five days after the operation. 3. Atresia recti. Operation in the usual place tried without success. Then an artificial anus was formed. Child died forty hours after the operation.—*Le Moniteur des hôpitaux*, 1858, No. 11.

II. RESPIRATORY ORGANS.

1. *Physical exploration of the lungs in infants.*—A. Vogel, lecturer at the University of Munich, gives the following results of his careful disquisitions on percussion and auscultation: 1st. There is no certain number of respirations, in small children; they fluctuate between 18 and 35 per minute. 2d. 60 observations, made on 22 sleeping infants of from 3 to 4 weeks of age, give the average of 26, 4 respirations per minute. 3d. When awake, the respiratory motions of small children are unrhythmical. 4th. All the acute diseases, as well as those of the respiratory organs, accelerate the respiratory motions, with the exception only of cerebral depression. 5th. In acute inflammatory diseases of the lungs respiration changes as to its *modus*, inspiration getting shorter, expiration longer (*respiration exspiratrice* of the French). 6th. Percussion is best performed without instruments, finger upon finger 7th. Percussion ought to be performed slowly and gently, and to be continued until it can be performed in the moments of either the fullest inspiration and most perfect expiration. 8th. Percussion yields, in healthy infants, whenever they exhibit abdominal pressure, a manifest dullness on the lower posterior lobes, in consequence of the air being confined and compressed in the lungs. This dullness is more manifest on the right side than on the left, because of the size and pressure of the liver. 9th. This dullness being physiological, pneumonia is perhaps not so frequent as it is generally believed to be; at all events, the therapeutical results in pneumonia appear sometimes suspicously favorable. 10th. Percussion is unavailing in bronchitis, lobulari pneumonia, acute tuberculosis, and hypertrophy of bronchial glands. 11. It is highly useful in the diagnosis of atelectasis, general emphysema, rachitical thorax, hydrothorax, and empyema. 12th. It is indispensable for the diagnosis of the enlarged thymus gland and lobar pneumonia. 13th. With restless infants, palpation has to take the place of percussion and auscultation. 14th. It is sufficient for the diagnosis of bronchitis and bronchial catarrh, not so much so of lobar pneumonia and larger carnifications. 15th. Auscultation is so difficult, the elasticity of the thorax

so favorable to the dispersion of sounds, and the normal respiratory sound so similar to bronchial respiration, in children, that auscultation is not nearly of the same value as in adults. 16th. There is no disease of the lungs, the diagnosis of which can be made certain, without other methods of exploration being used, by auscultation alone. (Crepitating rhonchus is an exception.) 17th. The result, as to the value of each of the different methods of exploration, is this: Percussion and auscultation are indispensable; palpation is of some importance; and auscultation least useful.—*Jahrbuch für Kinderheilkunde und physische Erziehung*, 1857, ii. p. 87.

2. *The condition of the lung not invariably to be depended on, as a proof that the infant has been born alive.*—Thomas Williamson reports cases, where the infants, while being born, respired freely, but afterwards one or more loops of the cord were found firmly encircling the throat. In some instances the disengaging of the coil of the cord was, owing to its extreme shortness, found impracticable; for each succeeding contraction of the uterus was found to lighten and constrict the umbilical ligature more and more; respiration ceased, and the face of the infant became black and congested. The author has found deep indentations around the neck of the child. In such a case, when left to itself, the infant would, after having respired, have been born dead, with an indented bluish groove encircling its neck. A post-mortem examination, in a case of alleged infanticide, would reveal all the indications usually regarded as conclusive proof that the child had been born alive.—*Edinburgh Medical Journal*, Feb. 1858, p. 713.

3. *Tracheotomy in Croup.*—James Spence reports five cases of tracheotomy in croup, to which we feel obliged to direct the attention of the profession, because of this operation being too little thought of in this country and in England, whereas it is, on the Continent of Europe, performed on an extensive scale, and with no small success. Dr. Spence's cases occurred in children of 4½, 3½, 4, 5, and 2½ years of age, the first, fourth, and fifth of whom recovered, the second and third died. In none of them was there any great amount of bronchial affection, and in none of them did the croupous exudation seem to have taken place to any great extent on the tracheal mucous surface, although the tenderness over the trachea prior to the operation, and the appearance of the lining membrane, as seen on opening the tube, proved that it was to some extent implicated. The author remarks, that bronchitis, or broncho-pneumonia, almost invariably occurs after tracheotomy is performed, and is one of the great objections to the operation in cases of croup, the inflammation being brought on by the operation itself, and the necessary presence of the tube.—*Edinburgh Medical Journal*, *Feb.* 1858, p. 673.

These circumstances do not seem to explain sufficiently the broncho-pneumonia frequently following tracheotomy, since Prof. Schuh, of Vienna, in the *Wiener Medicinische Wochenschrift*, 1857, published his able article on this subject. According to him the main reason is, penetration of the air to the air-cells of the lungs by too short and immediate a way. This assertion is made probable by the fact, that all the cases of broncho-pneumonia above-mentioned occurred in the right lung, and by the other fact, that the right bronchus is by far the widest.

A case of successfully performed tracheotomy is related by W. Valentine Bird, in *London Lancet*, Am. ed., March, 1858, p. 222.

A case of tracheotomy, performed with success on a boy of three years of age, for chronic laryngitis, is reported by Dr. S. Cabot, jr., of Boston, in *Boston Medical and Surgical Journal*, Feb. 25, 1858, p. 69.

Dr. Bribosia communicated recently, to the Academy of Medicine at Brussels, some observations on tracheotomy, which are of the highest interest, and elucidate the favorable influence of this operation.—*Journal für Kinderkrankheiten*, Jan. and Feb. 1858, p. 105.

Morphia in Pertussis.—Edward Smith was the first to publish his observations on and favorable results with the use of morphia in hooping-cough, in the *Medico-Chirurgical Transactions*, 1854. Dr. C. M. Müller, of Berlin, gives $\frac{1}{60}$, $\frac{1}{40}$, even $\frac{1}{35}$ of a grain of morphia, several times a day, until a low degree of stupor or sleepiness begins to show itself. After this he stops increasing the dose, but continues the same until the peculiar sound of the hooping-cough is gone. Ventilation, besides, is absolutely necessary; sometimes purgatives or tonics.—*Journal für Kinderkrankheiten*, Nov. and Dec., 1857, p. 315.

III.—NERVOUS SYSTEM.

1. *Apoplexy, with sudden death in children.*—Joseph H. Wythes reports in a short article, three cases, the post-mortem examinations of which are herewith given in his own language : *First case*, child three years old. "An extravasation of blood was observed between the cranium and dura-mater, perhaps half a fluid ounce. The vessels of the membranes were much injected, and the posterior part of the septum had a large clot of blood in it. The membranes were also in many places strongly adherent. The white substance of the brain was full of bloody dots or points, with the appearance of infiltrated blood in the posterior lobes, particularly on the right side. The right ventricle had in it a clot of blood, with serum."

Second case.—Child three months old. "The vessels of the arachnoid and pia-mater were considerably congested, and the whole cerebral substance was softened, being about the consistence of melted butter. A little serum was observed at the base of the left hemisphere of the cerebrum, but nothing abnormal in the ventricles. The membranes of the cerebellum and medulla oblongata, were strongly congested."

Third case.—Child three months old. "The membranes of the brain healthy, but its substance much congested. On slicing, it seemed full of bloody dots. A small clot of blood was found in each ventricle."—*The North American Medico-Chirurgical Review*, Jan. 1858, p. 71.

2. *Poisoning by opium in young children.*—F. Jarvine Murray reports two such cases, in which the treatment proved successful. An infant aged twelve months and a day, was allowed to swallow a quantity of laudanum equivalent to three grains of moist opium. Some hours were lost before help was procured. Tickling the fauces with the finger and

with a feather, the administration of mustard in tepid water, an emetic of ten grains of sulphate of zinc in tepid water, the sponges of Kemp's battery in the course of the phrenic nerve, proving unavailing, the stomach-pump was used with good effect. Then the child was placed in a warmed bed, with hot bottles to his feet ; hot blankets were applied from time to time, and sensation was kept up by frequent shocks from the electro-magnetic coil-apparatus. The symptoms appeared to be alleviated when the cutaneous excretion became copious, a fact in which Dr. Murray sees more than mere coincidence. Opium seems to him to be excreted by the skin, while the emission of every other discharge is impeded. For it frequently happens that on a post-mortem examination of persons destroyed by opium, no trace of the poison can be obtained (Pereira, ii., 2104 ; *Christison on Poisons* 4th ed., p. 698). Either, therefore, the constituents of opium are really present in the dead body, but cannot be detected by any known tests, or they are digestible and assimilable ; or they are got rid of by cutaneous excretion. Another child, seventeen months and two weeks old, took a solution of $\frac{9}{16}$ grains of the muriate of morphia. As four hours and a half had elapsed since the administration of the poison, the application of the stomach-pump was considered, to be unnecessary. Strong coffee was administered at short intervals, and galvanism employed to keep the child awake. Then the child was enveloped in hot blankets before a strong fire, until an hour and a half later, when the skin was in a state of profuse perspiration.

Dr. Murray adds the following valuable remarks : In respect to the operation of opium on the human system, infants differ from each other as widely as do adults. Numerous cases might be quoted in which a few minims of laudanum have proved fatal to young children. (See Beck in *Med. Gaz.*, 1843–44, p. 767.) For instance, Dr. F. Kelso records a case (*Lancet*, 1837–38, i., p. 304), in which a child nine months old was killed in nine hours by four drops of laudanum. In another case, a child between five and six years old, died in thirty-six hours from having taken an amount of paregoric containing from three quarters of a grain to one grain and a quarter of opium (*Guy's Hos. Rep.*, April 1844, p. 32). In a third case, a child aged seven months, was killed by a dose of paregoric, equal to a quarter of a grain of opium (*Pharmaceut. Jour.*, April, 1845, p. 467). Dr. Taylor cites the case of a child, four and a half years old, who was killed, in June 1832, by a dose of four grains of Dover's powder, containing not more than two-fifths of a grain of opium (*Guy's Hosp. Rep.*, 1844, ii., p. 41), and Dr. Christison mentions an instance in which the administration of three drops of laudanum in a chalk mixture, for diarrhœa, "to a stout child, fourteen months old, was followed by coma, convulsions, and death in about six hours" (*On Poisons*, p. 714). The only authenticated instance on record, which Dr. Murray knows of a child that has survived such a dose as was administered in the two cases detailed above, is given by Mr. Calahan in the *Dublin Med. Press* for April 22, 1846, p. 244.—*Edinburgh Medical Journal*, Feb. 1858,

p. 716. See also Blanc's case, cited by me from *Bulletin de Thérapeutique Médico-Chirurgicale*, Nov. 17, 1857, p. 452, in the *N. Y. Jour. of Med.*, Jan. 1858, p. 117; and Chamberlain's case, cited from the *Boston Medical and Surgical Journal*, Dec. 3d, 1857, in the *N. Y. J. of M.*, March 1858, p. 285.

3. *Etiology of convulsions.*—B. M. Wible of Louisville, Ky, publishes an article on the pathology and treatment of convulsions, founded mainly upon the teachings of Dr. Marshall Hall. According to him, "the nerve-force is impressed in convulsions, 1st, by irritating agents making an impression on the elements of the nerves, the impression being sent along the nerves to the spinal centres, and thence reflected to the muscles; 2d, by irritating agents, such as foreign substances making an impression directly on the centres; inflammation, or its effects; and poisons, or morbid materials circulating in the blood, exciting the nerves directly; and 3d, by mental emotions which are known to act on the spinal centres, causing them to send out motor impulses" (*North American Medico-Chirurgical Review*, Jan. 1858, p. 56). We shall not further illustrate these general principles, because we do not agree with the author in his opinion on a leading error pervading almost all the standard books and dissertations on convulsions. For it has been well known, even as far back as the time of J. L. Brachet (*Traité pratique des convulsions dans l'enfance*, Deuxième édition, 1837), that convulsions are not dependent, necessarily, upon a morbid condition of the brain; and there is scarcely any work on diseases of children generally, and convulsions particularly, which did not, long ago, contain the same physiological views on our subject as Dr. Wible's. Without, then, detracting from the value of his article, we have, as a reviewer, simply to state, that, good though its contents may be, they are not new.

4. *Large doses of tartar emetic in chorea.*—Mr. Gillette, physician to the Children's Hospital at Paris, gives tartar emetic in chorea in the following manner, as described in a dissertation, written by Emile Adolphe Bonfils (*De l'emploi de l'émétique à haute dose dans une série de chorées*). About four grains of the drug are given on the first day, about eight on the second, about twelve on the third. Then it is omitted in order to avoid the accumulation of the effect of the medicament. If necessary, somewhat larger doses are given in a second course, when a sufficient time has elapsed after the first one. Three courses have very seldom been found to be necessary. The number of observations recorded is large enough to attract the attention of, and trials by the profession.—*A. Dechambre in Gazette Hebdomadaire de Médecine et de Chirurgie*, 1858, No. 7, p. 115.

5. *Arsenic in chorea.*—Dr. David reports some cases of chorea, and asserts that he has treated many cases of chorea, occurring at different ages, and in both sexes, with arsenic, with complete success, in from two to six weeks.—*Boston Medical and Surgical Journal*, February 25, 1858, p. 77.

6. *Meningitis tuberculosa.*—Dr. Lesueur publishes, in the *Annales médicales De la Flandre occidentale*, five cases of meningitis tuberculosa,

of which three were cured by the method of Dr. Hahn, as described in his book *De la méningite tuberculeuse étudiée au point de vue clinique, par Henri Hahn*, Paris, 1853. Dr. Hahn's method is known to our readers to consist principally of embrocations of tartar emetic salve on the scalp. Although the five cases may not have been tuberculous meningitis, they were, at all events, severe cases of meningitis, and the favorable result is very remarkable indeed.—*Gazette des hôpitaux*, 1858, No. 8.

IV. ACUTE EXANTHEMS.

Rubeola.—Dr. Gelmo, of Vienna, draws the following conclusions: 1st. Particularly in the transition from one epidemic to another, eruptions are observed, which are neither scarlatinous, nor morbillous. 2d. Such cases have been observed, sometimes, in, as it were, epidemical frequency, but each time a distinctly characteristic epidemic, either scarlatina or morbilli, have been seen to follow. 3d. A few single cases, being anomalies of any eruptive disease, do not entitle the assumption of a new species. 4th. It must be acknowledged, that the authors writing on rubeola, have described roseola, scarlatina variegata, or the French rougeole (morbilli), amongst their cases. 5th. French authors, also, as for instance Rilliet and Barthez, state emphatically, that some physicians used to describe, at once with scarlatina and morbilli, a third species, rubeola; but that they do not see any reason by which the assumption of its existence ought to or could be supported. 6th. Therefore, there is no reason why the name of rubeola is kept any longer.—*Jahrbuch für Kinderheilkunde und physische Erziehung.* 1858, iii., 152.

V. MOTORY ORGANS.

State of Viscera in Scoliosis.—Professor Bouvier, of Paris, widely known as one of the best teachers on degenerations of the motory organs, and, lastly, by the publication of his clinical lectures on that subject, makes the following remarks on the state of the viscera in scoliotic subjects: The curvatures of the vertebral bodies, of the spinal canal, of the spinous processes, and of the spine, are not proportionate to each other. The curvature of the canal is less than of the vertebral bodies, and greater than that of the processus spinosi; the flexion of the spine is diminished in each curvature, and, therefore, its functions are rarely disturbed. Considerable curvatures only may affect the spine, at last, so as to shorten it on the part of the concavity of the curvature; if such is the case, the nerves on the same side are not in the like distance from each other, as on the convex side. The spinal nerves suffer least from the curvature of the column, for the intervertebral foramina remain almost always larger than the diameter of the nerves; such are even the worst cases, and, therefore, there is not much credit to be given to authors, who used to attribute several morbid symptoms, in scoliotic children, to the compression of the nerves. The *lungs* suffer very much. In curvatures to the right side the right lung is compressed, particularly in its posterior part, so much so as to be sometimes deprived of air;

the posterior part of the mediastinum is drawn in an oblique, nearly transversal direction; the left lung is reduced to a smaller diameter, especially in the antero-posterior direction; somewhat less so in a lateral one. If the curvature is to the left side, the left lung is more compressed, because of the presence of the heart, than the right lung in the reverse case. The *diaphragm* extends higher into the thoracic cavity, more so on the right than on the left side, in consequence of both the dorsal and the abdominal curvature, which diminishes the abdominal cavity. It is easily understood, that the results of auscultation and percussion are very much modified by all these peculiarities of conformation. The *heart* is not affected by the pressure of the thoracic walls to such a degree as the lungs. Its size is very seldom reduced, more generally increased; fatty degeneration has sometimes been observed, but scoliosis does not seem to produce it. It was a general belief formerly, that the pressure of the thoracic walls on the heart was liable to endanger life; such is not the case, as in the worst cases of scoliosis the heart is found to be situated on the right side of the spine. Thus its situation, as that of the great bloodvessels attached more or less to the vertebral column and its neighborhood, may be altered in different ways. The *abdominal cavity* is greatly diminished in size, stomach and bowels are pressed downwards, and a great part of the intestines is situated between the walls of the pelvis. The *transverse colon* may, sometimes, become vertical; in some cases, observed by Cruveilhier, and Bouvier, it was situated between liver and diaphragm. The size of the *liver* is not always reduced; sometimes it is even greatly increased, but not so in every direction, because it gets its shape from the bones by which it is confined on every side. Its surface is very much disfigured by the adjoining parts of the body; on the posterior side the vertebral column, on the right lobe the ribs, on the lower surface the right kidney, leave the vestiges of their pressure. Thus, the shape is never equal in such cases; usually the right lobe of the liver suffers most; the more so, if the lumbar vertebræ are directed to the right side. It suffers less, when they are bent to the left side, because there is, in this case, more room for them. The *spleen* moves easier, and, so far, is more apt to avoid pressure. Nevertheless, its surface, in some cases, shows superficial depressions and excavations. The *kidneys*, adjoining the vertebral column, are much affected by its curvatures. When the first abdominal vertebræ are turned to the right side, the right kidney is lower than the left one, and vice versa. The kidney corresponding to the convexity of considerable lumbar or lumbo-dorsal curvatures, by being compressed by vertebræ and ribs, becomes longer, narrower, smaller in bulk and lighter in weight; the kidney corresponding to the concavity compressed superiorly and inferiorly, becomes shorter and broader, but keeps, at least, its normal size.—*Gazette des Hôpitaux*, 1858. No. 1.

Report on the Progress of Obstetrical Science and Diseases of Women; prepared for the New York Journal of Medicine. By E. Noeggerath, M.D., Physician to the Female Department of the (Canal street) German Dispensary of the City of New York.

I. ANATOMY AND PHYSIOLOGY.

1. *On the vascular system of the gravid uterus* (*Monatschrift f. Geb.* Sept. 1857.)—Prof. Virchow, in demonstrating an injected uterus from a woman who had been in her fifth month of pregnancy, called the attention of the Fellows of the Berlin Obstetrical Society to several points of interest in its vascular system. In mentioning the enormous development of the whole system of the spermatic vein (internal), into a large pampiniform plexus, he observes that this increase of the stream-capacity of the venous vessels created a strong disposition to venous hypertrophy, which under certain circumstances might lead to excretion of albumen, and even to uræmic symptoms, especially if no collateral circulation existed to divert the blood from these organs. In the specimen which he exhibited, however, a collateral route was established, leading from the internal spermatic vein towards the soft parts in the retroperitoneal region. This was, according to Prof. Virchow's experience, a variety of circulation frequently met with in pregnancy. Considering the difference between the arterial and venous systems, he showed that the arteries ran alongside the veins as small winding cords, exhibiting a very decided corkscrew shape in the neighborhood of the placenta. In consequence of this winding course and their smaller capacity as compared with that of the veins, a considerable check to the circulation of blood was effected, since the return of the blood from the enlarged venous system could not proceed very fast. All this operated favorably upon the nutrition of the uterus, and prevented hypertrophization during pregnancy from exceeding the normal degree, as it occasionally happens in new formations, when the rapid current of arterial blood causes a correspondingly rapid growth.

Approaching the seat of the placenta, the veins of the chorion were seen becoming larger and larger, and finally passed over to form the placental sinuses, where the injection represented berry-shaped masses. Prof. V. asserted that a better injection could not be obtained, as they always exhibited these berry-shaped varicosities, into which the fœtal villi could be seen projecting. These villi, Prof. V. repeated, were not covered with an investment from the maternal system, but floated free in the large sinuses; the epithelium formed upon them belonged to their proper structure, which has been often ascertained in extra uterine ova, where the vascular arrangements were quite dissimilar in other respects.

2. *On the erectile and venous systems of the female pelvic organs* (*Lancet*, Feb. 1858).—Dr. Savage read a very interesting paper on this subject before *The Medical Society of London*, in which he stated that he had discovered a new structure hitherto not demonstrated, viz., the ***bulb of the ovary.*** This body is inclosed in an unyielding fibrous envelope—an

essential contradistinction as regards a mere venous plexus. The bulb of the ovary is a long, compact venous body, extending from the uterus to the ovary, which lies upon and is partially buried in it. Like the bulb of the vagina, it is provided with a special sheath, which establishes its erectile character. The office assigned to this body is that of tending to push the organ itself towards the prehensile extremity of the fallopian tube.

In a discussion which followed upon this subject, Dr. S. allowed that this bulb of the ovary had been described before (namely, by Dr. Kobelt; see his work: *Die Weiblichen u. männlichen Wollustorgane*, 1843); but its character as an erectile organ had not been pointed out before he (Dr. S.) had mentioned it.

3. *On Glycosuria lactantium* (*Monatschrift f. Geb.*, 9 B. 6 H.)—Dr. Theod. Kirsten detected the presence of sugar in the urine of women in childbed, especially in those cases where lactation had been interrupted. He examined some specimens from women where puerperal fever had cut short the secretion of milk, or where the children had died soon after birth. The method he used for ascertaining the presence of sugar was by reduction of the oxide of copper through the watery solution of the alcoholic extract of the urine.

4. *On Glycosuria in pregnant and parturient women* (*Monatschrift f. Geb.*, Feb. 1858).—For testing the truth of Dr. Blot's observation, according to which sugar was a natural ingredient of the urine of women in childbed and when pregnant, Dr. Riebel examined the urine of eleven women in childbed, two of whom had lost their children, and three pregnant women. In none of these fourteen cases was he able to detect the slightest traces of sugar after Trommer's test.

5. *Dr. E. Wiedehold and Dr. Leconte on the presence of sugar in the urine of pregnant women and those in childbed* (*Deutsche Klinik*, 41, 1857, *and Archiv. Gén.*, Août, 1857).—W. has proven by a number of experiments that the tests for detecting sugar by reduction of oxide of copper, in the usual way, especially as done by Dr. Blot, are unreliable, because the presence of mucous alone is sufficient for effecting the reduction, which therefore has to be removed before beginning the research. Also Dr. Leconte found that it was not the sugar that reduced the oxide of copper, but some other substance, which he believes to be uric acid. He never was able to produce an alcoholic fermentation in the tested urine.

II. PREGNANCY AND LABOR.

1. *Prof. Credé, of Leipzig, on three cases of induction of premature labor after Cohen's method* (*Monatschrift f. Geb.*, Feb. 1858).—The author reports three cases in which he lately induced premature confinement for contraction of the pelvis by injecting warm water into the uterus. To all the cases, only one injection of from 8 to 10 ounces of lukewarm water was required. The time from the first injection up to the expulsion of the child, was respectively 16, 17½, and 23 hours. Two children were born alive; one was dead in consequence of prolapse of the umbilical cord. The women scarcely had any sensation of uneasiness when the water was injected.

2. *Dr. Riedel on six cases of induction of premature labor after Cohen's method* (*Transactions of the Berlin Obstetrical Society. In Monatschrift f. Geb.*, January, 1858).—The author gives an account of his six cases of induction of premature labor by intra-uterine injections. The fact, that four of these children were stillborn, is accounted for by their malposition and consequent turning, thus exculpating the method from any blame. The time of labor from the first injection was respectively 5, 6, 11, 40, 44, and 63½ hours. This makes an average time of 28½ hours. The author insists upon the necessity of retaining the injected water for some length of time in the uterus.

3. *Dr. Domerc* (*in Le Moniteur des hôpitaux*, Jan., 1858) read a paper before the Paris Academy of Medicine *on a placenta* which came from a lady, confined for the first time *with three children*, of which one was born alive. After the delivery of the first child, the doctor removed the afterbirth, and ten minutes later a second child was removed, and another placenta which contained two pouches, one emptied, the second one closed and filled with another fœtus, both of which appeared to be about three months old. These two fœtuses had only one placenta with two amniotic cavities and one common chorion. The author is of opinion that these three children resulted from the fructification of two ovula, of which one contained two "germes," both having been in contact with the semen before they had descended into the uterus.

4. *Dr. Sastorph on a case of extra-uterine pregnancy, with happy result for the mother* (*Schmidt's Jahrb.* 1857).—On examining a woman, Dr. S. found her abdomen enlarged so as to make her appear to be in the eighth month of gestation, with most of the other reliable signs of pregnancy. Between the umbilicus and the left spina ant. sup., there was a large red spot on the skin, the most prominent portion of which had an almost black color. After application of warm poultices, the gangrenous spot was removed, and a great quantity of dark liquid was discharged from the opening. Through the hole thus formed, the finger entered into a spacious cavity, in which the body of a child could be easily identified. After the opening had been enlarged by the knife, the child was readily extracted, and the afterbirth, which was found situated near the upper end of the wound, could be easily removed. After some time there appeared in the discharge from the wound, different particles of the ingested food, so that no doubt was left about the existence of a communication between this cavity and one of the intestines. Still everything went on favorably, and three months later the wound was closed up entirely.

5. *Dr. Jobert* (*De Guyonville*) *on disturbance of sight during pregnancy* (*Schmidt's Jahrb*, 2, 1857).—Dr. J. records seven cases of disturbed sight. Most commonly it was double-sight, which disappeared after delivery in every instance. In six out of these seven cases, the women were pregnant with twins.

6. *Dr. C. Heise on tympanitis uteri* (*Monatschr. f. Geb.*, Berlin, Feb. 1858). Dr. H. attended a lady in her confinement, during which, after the discharge of the water, the uterus became suddenly enormously extended and very painful, while the patient became very much excited

and feverish. Though the pains were pretty strong, the labor did not advance any, and Dr. H. recognized a constriction of the internal uterine orifice round the neck of the fœtus, which seemed to yield after external application of extract of belladonna, for the head of the child now advanced and was finally born, during and after which a great quantity of a stinking gas was discharged with a gurgling noise from the uterus, while all the distressing symptoms left the patient immediately. The child was macerated, and the doctor explains the sudden and unusual dilatation of the uterus from the development of gases, originating from the contact of the dead fœtus with the atmospheric air, after the rupture of the membranes, while their escape was prevented by the ensuing constriction of the orifice of the uterus around the fœtus.

7. *Jacquemier on unusual size of the fœtal trunk as a cause of difficult labor (Gaz. hebdom.,* 4, 1857*).* 1. In January, 1857, a woman was confined in the obstetrical wards of Dr. Stoltz, of Strassburg, where, after expulsion of the head, the body of the child could not be removed, and when one arm was disengaged, and even torn from the shoulder-joint, the body retained its former position. A sharp hook was now inserted in the thorax, which was removed, but not until the lungs had been forced through the opening; the abdomen had now to be emptied of its contents before the entire child could be delivered. The consequences were gangrene of the vagina, peritonitis, and death of the patient from pyæmia. 2. Dr. Devoux attended a lady, where he had to apply the forceps for disengaging the head from the pelvis; and besides this he was able to free one arm, but it was utterly impossible to extract the body of the fœtus any farther, and the mother consequently died from exhaustion. A post-mortem examination revealed the fact, that while the head of the child was pulled forwards, the left shoulder of the unusually large child was constantly pressed against the arcus ossium pubis.

8. *Dr. Bachetti on abortive treatment of extra-uterine pregnancy by acupuncturation* (*L'union méd.*, No. 41, 1857). Dr. B. having diagnosticated an extra-uterine pregnancy in a lady of Pisa, and feeling the ovum of the size of a lemon-shaped movable tumor near the left fossa iliaca, he performed the electro-punctura in order to arrest the farther development of the ovum; and after its first application the tumor began to decrease, and disappeared entirely after a few months, when the menses began to flow anew.

9. *On compression of the aorta abdominalis as a means of arresting hemorrhage post partum* (*Monatschrift f. Geb.*, January, 1858). In a discussion of the obstetrical section of the meeting of German physicians and naturalists, on the value of Drs. Lee and Seutin's method of arresting uterine hemorrhage, the obstetricians came to the following conclusions: By the compression of the aorta abdominalis a contraction of the uterus is effected, and consequently hemorrhage stopped. But in order to obtain a lasting and sufficient contraction, the compression of the aorta must be performed: 1, for a certain length of time; 2, it must be perfect; 3, executed on the right spot, *i.e.* above the issue of the abdo-

minal vessels; and 4, the vena cava has to be avoided. As these cannot be accomplished in the living female, this method loses its value in practice, while its physiological basis is undeniable.

III. THE PUERPERAL STATE.

1. *On the investigation of the causes of puerperal fever, by Professor A. Martin (Monatschr. f. Geb.*, October, 1857.)—Prof. A. Martin, Director of the Lying-in Hospital in Munich, enters into an elaborate discussion of the causes of puerperal fever, taking for the basis and motive of his inquiries an epidemic which prevailed in that institution, between December 1856, and July 1857. The facts in the Munich epidemics are remarkable. The hospital in which the last epidemic appeared was a new building; the construction was carefully adapted to its purposes. Cleanliness and ventilation were scrupulously enforced. Dead bodies were always speedily removed to a distant building. The discharges, placenta, etc., were immediately placed in air-tight vessels, pending their removal. The syringes, catheters, etc., used in the sick wards, were strictly confined to the use of the patients in them. The sick women were isolated in separated chambers. The attendants were enjoined to wash their hands in chlorine water. As in the Dublin Lying-in Hospital, the wards were used in rotation, some being always empty to allow of time for cleansing. In short, no care seems to have been spared. Yet the disease spread. From the 1st of October, 1856, to the end of July, 1857, 1,090 patients were admitted. Of these, 88 suffered from puerperal fever, and allied pathological affections, as metritis, phlegmasia alba, phlebitis, etc. Of these 88 cases, 47 recovered, and 37 died, leaving 4 under treatment. One circumstance deserves mention, although it cannot have exerted material influence in the production of the disease. The building was lighted with gas; some of the gas-pipes leaked, and for a time all the wards were tainted with gas-stench. Some of the attendants who slept near the pipes complained of vertigo, headache, prostration, and diarrhœa; and as similar symptoms appeared among the patients, it was determined for a while to discontinue the gas-lighting. The most probable cause appears to have been cadaveric infection. During January and February no serious illnesses had appeared. Suddenly, on one and the same day, two puerperal women were seized with fever. Both had been delivered normally nearly at the same hour. In neither case could any cause be detected. At last it appeared that an assistant, without the knowledge of the directors, had examined the body of a child in the remote dead-house, having, indeed, as he declared, carefully washed with chlorine water, and had immediately afterwards examined these two women, and no others. No other women were affected at the time. The guilty assistant confessed that the same thing had happened to him at the outset of the fever in December, when also the patients examined by him were the first seized. The sickness thus originated in December. Several cases of puerperal fever occurred up to the end of February, more or less severe, and it required a space of sixteen to twenty-one days to restore more satisfactory relations. It is further

observed that the clinique of the hospital was held every morning from ten to eleven o'clock, when a great number of practitioners proceeding direct from the neighboring cliniques, where they had visited typhoid patients, and often even from the anatomical theatres, came in. Students also engaged in microscopical pursuits visited the wards. The hospital was shut up at the end of April. When first reopened, the cases were milder in form, and less frequent. But when the clinique was reopened in July, and students attended, several severe and rapidly fatal cases occurred. These ceased when the clinique terminated at the end of the session. [This article may be considered a strong corroboration of Dr. Semelweiss's theory of cadaveric infection. Still in the lying-in hospital of Bonn, where the writer was formerly an assistant for two years, the students as well as myself often went from the dissecting-table directly to the lying-in wards, for examining parturient women, without even taking the precaution of washing our hands with chlorine water. But we did not induce a case of puerperal fever, and I know from Prof. Kilian himself, that he scarcely remembered to have seen the disease in his wards for eight or ten years.

E. N.]

2. *Piedegal on prophylactic treatment of puerperal fever* (*Gaz. Médic.* 1857, 49).—Dr. P. administered chinin. sulf. gr. iii., and ferri carbon. ʒss twice a day to every woman in childbed who was received in his wards, and continued in this medication till they were discharged. The doses were increased when symptoms of fever set in. The result of this treatment was, that of 91 women, 26 were seized with the first symptoms of disease, of which 24 recovered, and only two died.

3. *D. Hutchinson, M. D., on a peculiar puerperal disease* (*The Fiske Prize Essay, Amer. Jour. of Med. Science,* October 1857).—Dr. D. Hutchinson has drawn up a dissertation on a rare puerperal disease. Its general features are as follows : remarkable tenderness of the inside of the lips, the tongue, and the throat; a constant discharge of saliva, a burning uneasiness of the tongue, throat, breast, stomach, and great uneasiness in swallowing ; a constant tendency to diarrhœa, and a feeling as if the food did not remain in the stomach, but passed immediately through the bowels ; frequent pulse, great debility, and increasing emaciation ; the throat raw and a little inflamed, the edges of the tongue and the inside of the under lip excoriated and covered with small ulcers ; a painful excoriation about the anus and the labia.

In a few dissections that have been made, ulcerations of the mucous membrane of the intestinal canal have existed in every instance; traces of inflammation have also been found in the bladder and in the vagina. Dr. H. enters upon an elaborate discussion of the causes, which he divides into intrinsic and extrinsic. There appears reason to believe that a certain epidemic constitution had influence. It was rarely seen in the western States until after the appearance of dysentery and diarrhœa in 1849, 1850, 1851, 1852, 1853, and 1854. During the ten years preceding 1849, but two cases, of a mild character, came under his observation. After the appearance of dysentery, the affection became more common. In these years, aphthous stomatitis was not an unfrequent accompaniment of dysentery in its latter stages, and in several instances cancrum oris supervened in children. The principal treatment is the administration of tonics.

[In England, where this disease is not unfrequently met with, quinine and mineral acids, occasionally combined with iron and colombo, and the best diet procurable, has been found the most successful treatment. In very desperate cases, with hectic fever and night sweats, benefit is derived from phosphate of zinc and extract of conium, in addition to the above treatment. E. N.]

IV.—PATHOLOGY OF NON-PREGNANT WOMEN.

1. *H. Savage, M. D., on obstinate menorrhagia* (*Lancet*, Feb., 1858.)—After some preliminary remarks on intractable menorrhagia, the author reports two cases, illustrating a new way of treating this complaint.

Case 1.—A chlorotic woman had never noticed an irregularity in the catamenial function till six months after her second and last confinement, when she began to flood, and continued to do so for eight months, with the intermission of only one week every time. Everything was tried, but in vain, by several physicians. Dr. S., on examination, discovered nothing but a slight enlargement of the uterus, which had a soft feel. Cold hip-baths, oxide of silver, Indian hemp, made but a slight impression. An injection of tannin and alum into the womb brought the menorrhagia to an almost perfect stand still, which lasted for four months, when it returned as bad as ever. Now the cavity of the uterus was enlarged successively by sponge-tents, and the whole of its internal surface scratched away by Recamier's curette, by which only a very limited quantity of vegetations was removed, but instead a good quantity of a jelly-like white, tough, transparent mucus. The hemorrhage first increased, but lessened considerably after half an hour, and was still less on the following day. With a view to destroy more effectually the polypoid vegetations, two injections of tinct. iod. ʒiii., at intervals of three days, into the uterine cavity were applied, after which the hemorrhage stopped instantly. Dr. S. saw the patient nine months afterwards, when he learned from her, that the catamenial periods had been perfectly natural ever since. *Case* 2.—A pallid, debilitated woman complained of excessive loss of blood at the catamenial periods, during the past two years, since the time of a miscarriage. The uterus was soft and enlarged. The os uteri was artificially dilated, and two ounces of tincture of iodine, with two ounces of water, were injected into the uterus. The same injection was repeated every third day for a fortnight, after which the hemorrhage ceased entirely, and the uterus began evidently to return to its right size.

2. *Dr. Breslau, on extremely obstinate menorrhagia cured by injections of liquor ferri sesquichlor.* (*Monatschrift f. Geb.*, October, 1857.)—In a woman 45 years of age, where the ordinary means had failed to stop an excessive menorrhagia, Dr. B. detected the uterus soft, enlarged, and perfectly bent upon itself. He resolved to apply the liquor fer. sesquichl. to the inner surface of the uterus. Having first straightened the retroflected uterus and inserted an elastic catheter as far as the

fundus, he injected one ounce and a half of the liquor ferri, diluted with an equal quantity of water. The injected fluid was retained in the uterine cavity for a minute and a half, by the pressure of the fingers at the os around the catheter. During the operation the patient felt a dull, labor-like pain, which lasted for two hours. The hemorrhage now suddenly stopped, and was not renewed. After some days, brown crumbling clots were discharged, but no fluid blood. Seven months afterwards there had been no return of menorrhagia.

3. *Dr. C. Charnal—Considérations sur l'amputation du col de l'utérus,* (*Monit. des Hôpitaux,* Feb., 1857.)—The author gives an analysis of eleven operations performed with the écraseur (3 by Chassaignac, 1 by Depaul, 3 by Demarquay, 4 by Breslau). None of these operations was followed by evil consequences, such as were often witnessed after the operation with the knife. One of Demarquay's patients was in the fifth month of pregnancy, which was not detected until one month after the operation, when the woman gave birth to a six months' child, immediately after the application of the actual cautery, which had been applied for promoting a prompter and better cicatrization among the diseases for which the operation was performed; there were two cases of prolapsus uteri, which were entirely cured after the removal of the hypertrophied neck with the écraseur.

4. *James Paget on the average duration of life of women suffering from cancer of the breast* (*L'Union médicale,* No. 35, March, 1857).—Though the author was formerly of opinion, that women affected with cancer of the breast, if not operated upon, had, on an average, fifteen months longer to live than those who had been, he has now come to the opposite opinion by a more minute statistical analysis of 139 cases.

In 75 cases, where no operation was performed, the average duration of life from the first stage of the disease, was 48 months, while in 64 cases, where the patients survived the operation, it was 52 months. The longest lifetime enjoyed by one of the first class was 216 months, the shortest 7 months; the longest of the latter class was 186, the shortest 7½ months.

	Of 100 operated upon.	Of 100 not operated upon.
Died in the 1st year,	4.7	8.9
" " 2d "	6.25	22.6
" " 3d "	21.8	24.0
" " 4th "	14.0	9.37
" " 5th "	20.0	7.3
" " 6th "	11.0	5.3
" " 7th "	93.7	9.37
" " 8th "	3.12	2.66
During the following years,	9.37	12.0

CORRESPONDENCE.

MR. EDITOR: In an essay recently put forth by me upon the treatment of "Prolapse of the Funis," by position, aided by manipulation, I find that I have stated one or two points in such a way as not to have conveyed the meaning which I intended. I am, of course, anxious that the method advanced should prove efficient, and would thank you to aid me in removing some of its chances of failure, by publication of this note.

1. I am convinced that the introduction of the whole hand into the vagina in returning the cord, is *essential to success; the fingers alone will fail*, more surely when the position of the presenting part is altered by the change of attitude advised, than they would do when the patient is on the back. The cord should then be pushed entirely beyond the part presenting.

2. The position alone will rarely, if ever, cause the return of the cord, without the aid of manipulation, unless the bag of water is unbroken, and even then it may not.

Truly yours,

DR. STEPHEN SMITH. T. GAILLARD THOMAS.

A case of successful administration of the hydrated peroxide of iron as an antidote for arsenious acid.—By WM. G. MEACHEM, M.D., Warsaw, Wyoming County, N. Y.—On the afternoon of Saturday, Jan. 2d, I was hastily summoned to the side of Mr. H. C., of this village, a young man æt. 25, who, as the messenger informed me, was strongly suspected of having poisoned himself. Upon reaching his house, I found him prone upon the floor, his body arched in that curve which unmistakably evinces incipient or confirmed spasmodic contraction of the muscular coat of the stomach and intestines, or of the diaphragm and anterior abdominal muscles, or of both combined. As I took him by the hand and called him by name, he instantly became so convulsed that three able-bodied men who were present could with great difficulty restrain him. The paroxysm soon subsided, its duration not exceeding thirty or forty seconds. Immediately coupling the intimation that the messenger had given me with the initiative cramp of the stomach and bowels, and the rapidily succeeding universal convulsion, confirmed the suspicion of poisoning. His wife informed me that he had told her there was something in his vest pocket which would acquaint her with what he had done to himself. I had the pocket searched, and in it was found a paper superscribed with "Poison, arsenic," and containing the brilliant crystals of arsenious acid.

Being unprovided with either of the prompter emetics, I prepared and administered to the patient an emetic dose of *antimonii et potassæ tartras.* By reason of the extreme rigidity of the facial muscles then existing, I found it next to impossible to introduce the spoon between his teeth. When the spasm had relaxed sufficiently to admit of free deglutition, copious draughts of milk were also prescribed. This done, I sent to procure the arsenical antidote, the hydrated peroxide of iron, and, after an appropriate interval from the former administration of the tartar emetic, which had proved ineffectual in establishing emesis, I repeated the antimonial. The convulsions continued to recur with considerable regularity every fifteen or twenty minutes, persisting each time from thirty to forty seconds.

While awaiting the arrival of the antidote, and in an interval of quiet, I questioned the patient relative to the circumstances of the rash act. With faint utterance he replied that he had purchased the arsenic at one of the drug stores in the village, and had taken a half teaspoonful of it three several times. Some unsolicited expressions which he made use of, full of a consciouness of his perilous condition, confirmed his direct avowal of having ingested a deadly dose.

He suffered intensely in the stomach and bowels, not simply when the spasms were upon him, but in the quiet interims as well, as was no less plainly evinced by his repeated pressure of the abdominal walls with his hands, by the forward inclination of his body (a position assumed, manifestly with the design of relaxing the abdominal tension), and by the frightful anxiety of his countenance, than positively asserted by his own lips. The convulsive paroxysms were attended with wild, staring, blood-shot eyes, with imprecations and fearful ravings, and with maniacal fury. The previous free indulgence of the patient in intoxicating drink, may have served to intensify the delirium which was a marked symptom of the paroxysms; and yet the arsenic, doubtless, was itself competent to the institution of the most uncontrollable frenzy. When the convulsions left him he invariably sunk into a temporary prostration, that so nearly resembled his anticipated death, that none but a medical man could suppose him still alive. His pulse, during the interludes, was irregular, uneven, intermittent and accelerated. Now and then, an ineffectual effort at vomiting was made.

The preparation brought was *the solution of the tersulphate of the sesquioxide of iron*, from which, with the aid of *the solution of ammonia, the pulpy, precipitated peroxide* was soon obtained, and its administration in tablespoonful doses every five or ten minutes, commenced. The convulsions still recurred at their usual intervals, but at length, after repeated doses of the antidote had been given, the agonizing pain in the stomach and bowels was apparently somewhat assuaged, for the patient exhibited less anxiety of countenance and applied his hands to the abdomen less frequently and nervously, and soon thereafter copious emesis ensued, and general convulsion ceased. The administration of the antidote was still continued at intervals of half an hour, for I was well aware that, though the immediate danger was obviated, it was the wiser plan to persist in the use of the iron; the arsenic remaining, the counter-poison was quite harmless, even in the largest quantities. A second vomiting occurred about an hour subsequent to, and was quite as free as, the first. The ejected matter was apparently little else than the milk which had been imbibed and colored with the reddish-brown particles of the ferruginous antidote; the unusual quantity of liquid, however, far exceeding the bulk of that which was ingested in the milk. The patient informed me that he had omitted his dinner that day, purposely, no doubt, to insure a speedy and effectual action of the drug, for he had evidently acquainted himself with the preliminary steps requisite to the fatal deed. In confirmation of this it may be remarked, that he had made an attempt upon his life with the same fearful, irritant poison, only three days previously, but then he took so much that his stomach immediately expelled it. This time he had gone to work evidently with a scientific comprehension of what he was purposing, securing an empty stomach to facilitate absorption, and dealing out to himself the arsenic in moderately-divided doses.

The antidote was repeated once or twice after the second vomiting, and then suspended. Cataplasms of mustard were now applied to the epigastrium and soles of the feet, and *infusum ulmi*, *ad libitum*, was prescribed as a demulcent drink. The excruciating pain in the stomach and bowels began to subside almost simultaneously with the former emesis; and within half an hour subsequent to the latter, the patient expressed himself free from pain, excepting a severe headache. He still continued delirious, but the delirium was of a much more quiet character than that which had attended the convulsive seizures.

At 9 P.M., having been with him since 5 of that afternoon, I left him for an hour and a half, and on my return found him quite talkative and loudly clamoring for bread. He now declared himself to be in all respects comfortable, excepting a general soreness (the result of his violent spasms), and an inordinate hunger distressed him. His pulse had resumed a comparatively normal state, and he was evidently rescued from a fearful death. Dealing out a few anodyne powders to be taken *pro re natâ*, enjoining upon the patient the frequent and free ingestion of *infusum ulmi* or mucilage, and instructing the friends to prepare for him some bland farinaceous diet, such as sago, tapioca, or rice-water, should he demand nourishment, I left him for the night.

At my next visit, at 8 A.M. the succeeding day, I found my patient sitting up with his family, but gloomy, morose, and irritable. He complained much of sore lips, mouth, and throat, a circumstance explained by the fact that he had *licked* the arsenic from its containing paper. Enjoining upon my patient strict attention to diet and regimen, and recommending a continuation of the free use of diluents, I took my leave until the evening, when I again visited him, and found him in social converse with his family and relatives, and willing to engage with me in a lengthened and earnest chat, that manifested a condition of bodily and mental exhilaration and satisfaction with life, the very antipodes of the sullen despair and misanthropic hate of the preceding day.

January 6th.—H. C. is now apparently as well as usual.

The points in this case worthy of especial note, are *the length of time that intervened between the ingestion of the poison and the administration of its antidote, and the speedy subsidence of the irritation and congestion, and, it may even be, the inflammation of the mucous membrane of th* [illegible]. The interval between the taking of the drug and the first [illegible] of the iron must have been, at the very lowest estimate, *two hours*. There is one other case on record, reported by Mr. John Robson (*Am. Jour. of the Med. Sciences*, xx. p. 522, from the *London Med. Gaz.*, Nov. 5, 1836), in which the amount of arsenic swallowed and the time that elapsed before the administration of the hydrated peroxide, are identical with the corresponding amount and time in the present case. The milk enveloping and diluting the poison and sheathing the coats of the stomach, in the first place, and the counter-irritation and the use of diluents subsequently, were undoubtedly more or less operative in retarding and blunting the powerfully irritant effects of the deadly dose.

I give publicity to this case, not simply to add to the gradually accumulating evidence confirmatory of the antidotal value of the hydrated peroxide of iron in instances of poisoning by arsenious acid, but also, and more especially, with the design of impressing upon my fellow-practitioners in the country, the propriety, the necessity of being always provided with the respective antidotes of all the deadly drugs; for, whenever a physician is summoned to a poisoned individual, *means ready at hand* are both life to the one and reputation to the other. Every practitioner in the country should regard the supplying of himself with these antidotes as sacred a duty as the acquainting of himself with their existence, their properties, and their actions. The importance of the duty must be evident to every one who duly considers how poorly conversant and poorly supplied with these counter-poisons are the generality of country druggists, and how lengthy an interval of time must often elapse, by reason of distance, even under the most favorable circumstances, before the needed assistance can be rendered to a poisoned individual in the rural districts. Let every physician, therefore, whose eye shall fall upon the record of this case, learn from its auspicious result *to be prepared* (if he be not already) to meet every similar emergency, and to conduct it to an equally happy issue.

I have narrated the history of this case both antecedent and subsequent to taking the patient in medical charge, somewhat *in extenso*, that the reader may be fully convinced that a poisonous dose of arsenious acid was really ingested, and its fatal consequences actually averted by the antidotal energies of the hydrated peroxide of iron.

EDITORIAL AND MISCELLANEA.

The Wood Prizes.—Dr. Jas. R. Wood, on the inauguration of the Pathological Building of Bellevue Hospital, offered two prizes, one of $50 and the other of $25, to the matriculated students of the three medical colleges of this city for the best anatomical or surgical preparation that should be presented to the Hospital; his object being to found a Museum for that institution. On the 1st March, the first presentation of these prizes took place in the new theatre of the hospital, when there was a large attendance of students, professors, and members of the Faculty. The successful specimens were placed on a table in the centre of the room, and were much admired. The laudable ambition between the different colleges to excel in this matter, especially in this the first prize of its kind ever offered, stimulated the students of our city to extra efforts to carry the palm for their respective institutions.

The first prize of $50 was awarded to George Frederick Shrady, of the College of Physicians and Surgeons. He passed his examination in March of last year, but could not receive his degree, until last March, having not until then arrived at the age of twenty-one years.

The second prize of $25, to Geo. Edward Post, of the University Medical College.

Dr. Shrady made a preparation of the nerves and vessels of the head, neck, thorax, and arms of an adult. The specimen is upright upon a suitable stand, the head being thrown back so that the face looks upward. The top of the skull is sawn off, to bring to view the situation of the twelve pairs of nerves in their relation to each other as they enter their respective foramina. The seventh pair (*portio dura*) is beautifully dissected; this is especially the case upon one side of the face where its fibres are followed out to such a minuteness that it has the appearance of a piece of lacework. On the other side, the fifth pair (*Trifacial*) is shown from the Casserian ganglion to the minute ramification of all its branches. This is brought into view by the removal of portions of those bones of the cranium which are between the ear and external angle of the frontal bone, extending as far in as the spheno-maxillary fossa, where is seen Meckel's ganglion, with its connections with the superior maxillary nerve of that side.

The inferior maxilla of that side is also removed from its articulation to within a quarter of an inch of the inferior dental foramen, through which emerges the inferior dental nerve, which is complete throughout its whole extent. Over all this fifth pair stretches the complicated network of the *portio dura*. Upon that side also the nerves that go down the neck are traced from their very point of emergence through the base of the skull. The neck, thorax, and arms are dissected in a manner to agree with the head. The anterior and posterior cervical nerves are traced from the intervertebral foramina to their termination on each side of the neck, in an intricate meshwork of nerve fibre.

The inosculations of the *portio dura*, trifacial and cervical nerves, with each other are admirably shown.

The great vessels are shown as they come from the heart and upon one side, the carotid and its branches are traced in relation to the nerves as far up as the floor of the skull. The thorax is thrown open, showing the sympathetic, phrenic, pneumogastric, and intercostal nerves. The branches of the brachial plexus are followed down as far as the bend of the elbow. In one arm the deltoid muscle is removed to show the course of the circumflex nerve, while in the other the course of the musculo-spiral is shown by a removal of the triceps. These are the main points to notice. The specimen is one that bears inspection, and in its execution shows an amount of patient skill and knowledge of Anatomy that does infinite credit to its maker.

Dr. Shrady is now Senior Walker in the Surgical Division of the New York Hospital. The preparation of this specimen well-nigh cost him his life—he having suffered from a severe attack of typhoid fever, consequent upon the labor and confinement of the dissecting-room. The specimen is now at the Bellevue Hospital, and those who wish to look over it can do so with profit.

Mr. Post's specimen consists of a dissection of the cranial, cervical, and dorsal ramifications of the sympathetic, designed especially to illustrate the communication of the spinal and ganglionic system. In the head, on the right side, are displayed the sympathetic inosculations of the orbit, internal ear, sublingual region, and cavernous sinus ; on the left, the connection of Cloquet's and Meckel's ganglia, also the carotid plexus. In the neck are shown, on the right side, the more superficial, and on the left the deeper connections of the trisplanchnic, pneumogastric, and phrenic, with the lateral cardiac branches. In the thorax, the cardiac, bronchial, and the thoracic ganglia are traced to their ultimate connections, and the origin of the greater splanchnic exhibited.

Dr. Valentine Mott made the presentation, and accompanied it with some very appropriate remarks. He said that on Saturday last there was a Commission appointed to convene from the three Medical Schools of the city, for the purpose of examining the several specimens presented, and from the circumstance of his (Dr. Mott's) age, he was selected as chairman, and performed the duties of the office as well as he could. When those duties were ended, the members of the Commission were kind enough, on the same ground of finding no man so old as himself, to perform the agreeable duty—for agreeable it was in a professional sense—to depute him to present the prizes to the successful candidates. That Commission consisted of the Professors of Anatomy and Surgery in the schools of the city, and so delicate were they in reference to this important decision—important, because it was the first decision in this city in relation to prizes proposed by a surgeon of this house—that they balloted, and the ballot resulted in the choice of the specimens now upon the table. He held in his hand the certificates, which were signed by all the members of the Commission present on that very important occasion, because it formed a new era in the history of surgery in our city. The speaker dwelt at some length on the importance of a thorough knowledge of surgical anatomy, and declared that unless a man cultivated and studied that branch, which was introduced by Sir Astley Cooper, and subsequently carried on by Dr. Allen Burns, of Glasgow, he was not a fit person to perform a surgical operation. After referring to his own labors—subsequent to his return to this country in 1809—in drawing attention to this subject, and in disseminating the views thereon of Cooper, whose student he had been, he declared his belief that the institutions of this city would be more important in the way of distributing useful and practical knowledge than all the other institutions of this country put together.

In presenting the first prize to Dr. Shrady, he stated that it had been his fortune to see a great many dissections, and he had made many himself, but he was willing to say, that not in his own Museum, nor at any place he knew of, were there so many branches of the Trifacial followed out as in this specimen. This specimen, said he, does infinite honor to the young man who made it, and promises for him a glorious future, and furthermore is a credit to the medical science of the age. He congratulated the successful candidate warmly on his knowledge of Anatomy and skill in dissection, which this great work indicated, and said that he would have been proud to have been the maker of it himself. He eulogized highly the noble effort made by Dr. Wood in founding a Museum for the Hospital, and after congratulating him upon the success of his first endeavor, he referred with pride to the fact that Dr. Wood was once his pupil.

Mr. Post's specimen was lauded particularly for the skill and neatness with which it was prepared, and, in conclusion, he wished him that amount of success that had hitherto attended all the exertions of his father, Prof. Alfred C. Post.

Mr. Post's testimonial for the second best preparation was similar to Dr. Shrady's.

Dr. J. W. Francis followed Dr. Mott. He traced the history of Preservative Anatomy, as he called it, from the time of the celebrated Ruysch, of Amsterdam, who began to practise it in 1630, down to our own days. Ruysch, he said, died at the age of 93, a marvel to all who passed through Holland, after having labored in his art for more than 60 years, and for many hours a day. The Czar, Peter the Great, repeatedly left Russia to come to Holland to admire his specimens, and take his breakfast with him, and, as the story goes, they generally had a blow-out together before they parted. [Laughter.] The Czar offered Ruysch £25.000 for his museum. The offer was accepted, and Holland had to part with that magnificent possession. But Ruysch, though in his 60th year, set to work again. Having an active son and a wonderfully clever anatomical daughter, who dissected everything, no matter what, he recommenced his labors, and soon accumulated a new museum. It was a singular fact that in all their physical investigations, these old professors always had their children at their elbows. The very illustrations for Blumenbach's Anatomical Dissertations were made by his daughter, a tall, raw-boned girl. This mode of instruction was adopted about 1677—1700—1710. Paris closely followed Holland, and Edinburgh adopted it soon after Paris. About thirty years after, Monroe began in Edinburgh. Hunter made anatomical preparations in Rhode Island; Philadelphia, though she had now a good collection, was the last of all the American cities to exhibit any enterprise in this matter. In coming to New York, we find that Dr. Post brought out to this country a large collection particularly illustrating the absorbent system, because he had studied under Cruikshanks, who wrote on absorbents. He also brought out many specimens of vascular preparations, because he had also been a student of John Hunter's. But why did he not bring out some of the remarkable specimens of John Sheldon, another of his teachers? The reason was that Sheldon kept the peculiar secret of his art to himself, just as Ruysch did. There was a plan adopted by those men of giving a color and efflorescence to the skin of the subject, which the moderns do not seem to understand. John Sheldon had fallen in love with, and married, a very beautiful lady who died. He was determined not to part with her, even though death had occurred, and he had her made into a preparation, and for more than thirty years this beautiful anatomical specimen, fresh as in life, was preserved by him. Sheldon died in the year 1800, Professor of the Anatomy of Painting to the Royal Academy of Arts, having succeeded the Hunters. In a book of travels, written by Dr. Mott thirty years ago, he (Dr. F.) remembered to have seen an account of a famous Italian anatomist, Segatto, who possessed the secret of making human flesh as hard as stone, so that he was able to make a mosaic table out of different pieces! Dr. Francis, after pursuing this subject somewhat further, concluded by expressing the hope that fortune might smile on all the young men who surrounded him, and he trusted that they would be as familiar with the subject of their studies as was Dr. Post, who, when a preparation was forced on his attention in a Parisian hospital, as being one extremely well done, remarked, "Yes, it is extremely well done, but I am sorry to see the artery on the wrong side!" [Loud applause.]

Dr. Mott again rose and called attention to the excellence of the other specimens presented for the prizes.

He was followed by Professor Smith, of Twenty-third-street College, who made a few remarks indicative of his high approval of the object for which the prizes were offered, and of the merit of the specimens exhibited.

Dr. Smith was followed by Dr. Jas. R. Wood and Geo. T. Elliot, who made remarks suitable to the occasion, after which the meeting dispersed, highly pleased with the day's proceedings.

To Dr. Wood the profession owe their thanks for thus taking the lead in this matter. His energy and perseverance have already done a great deal for Bellevue Hospital;* but the offering of these prizes, as a present to the Museum, have placed those, who look to the welfare of the institution, under renewed obligations to him. He is really the first, unconnected with any particular college, who has offered prizes of this character. His idea is an original one, and so far his success has been complete; he has secured a good foundation to build upon. If the character of the specimens, that are to follow these annually, can compare favorably with them, Dr. Wood ere long need not be backward in claiming for himself the honor of founding a museum, the like of which cannot be found in this country or abroad.

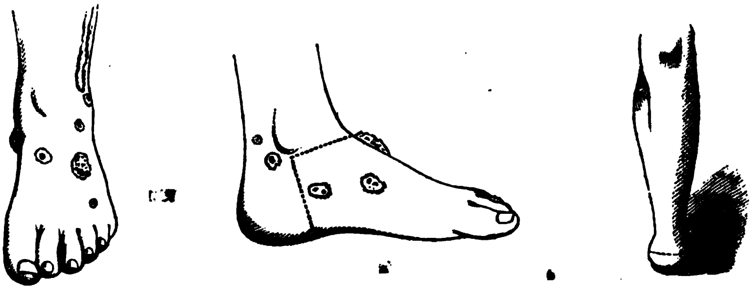
Amputation at the ankle-joints.—Mr. Fergusson emphatically enunciates that "amputations at the ankle-joint after the mode of Mr. Syme constitute the greatest improvement in modern surgery;" and multiplied cases in American practice prove, not only the force of his assertion, their very great safety and gratifying utility, but afford a pleasing contrast to the melancholy results of the too common interposition of special ignorance, stolid indifference, or caprice. The benefits of so important an acquisition, and the right of every victim of misfortune to all the blessings which a scientific and conservative practice can confer upon him, are also thus shown.

The art of surgery too often suffers in the hands of its friends, by a bigoted adherence to favorite authority, with custom on the one hand, and inadvertence on the other. There are many men now walking painfully on peg legs, or indifferently well with properly adjusted limbs who would have been an hundred-fold benefited had they fallen into the hands of a modern and expert surgeon, and their cases well improved by a removal of the foot at the ankle-joint.

Although it is now well established that many limbs admit of amputation at the ankle-joint which were formerly sacrificed, a most important question has been raised, viz.:—Is not amputation at the ankle-joint preferable to the medio-tarsal, or Chopart's operation? Mr. Syme states that he has frequently re-amputated at the ankle-joint where Chopart's operation had previously been performed, and he seems now disposed to reject the latter entirely. The far greater facility which an amputation at the ankle-joint affords for the adjusting a light, useful, and natural-appearing foot; and, as a point of support, its entire exemption from those embarrassing and painful incidents so commonly associated with amputation through the foot, as the invariable retraction of the heel cord when its antagonistic power is destroyed, the pendency of the stump, and exposure of the cicatrix, increased by the line of weight of the body being thrown forward of the stump, all furnish cogent reasons for hailing ankle-joint amputations as a substitute for Chopart's at the foot. We are strongly impressed, by personal observation and experience, that there is no advantage gained by an amputation, at the medio-tarsal line—that does not in a far greater and surer degree accrue when performed skillfully at the ankle-joint.

We take pleasure in inserting the following case communicated to us by Dr. Tewksbury, of Portland, Me., of an ankle-joint amputation performed under an adverse condition of the integumentary and articular portion of the parts surrounding and constituting the ankle joint:

Mrs. H—— is thirty-three years of age—of marked strumous diathesis and much emaciated. My attention was first called to her, June 10th, 1856. She was then suffering from a disease of the left foot, caused, she said, by a sprain received three years before, and commencing with severe pain and swelling on the outer portion of the instep, which continued until suppuration occurred, and small abcesses having little sinus-openings were formed in various parts of the foot, like those often seen around scrofulous joints. Of these sinuses there were eleven—each having unhealthy, purple edges, and admitting a *probe* freely into the substance of the tarsal bones, more particularly into the calcaneum, cuboid, and the anterior and inferior portion of the astragalus. The soft parts around the foot and ankle were diseased as above described. Amputation under these circumstances appeared the only chance for recovery. The extent of the disease rendered Chopart's operation impracticable; consequently following the ordinary practice amputation should have been performed at the lower part of the leg, above the ankle. The published recommendations of Prof. Syme of Edinburgh, in favor of the ankle-joint operation, induced me to select that as the site of the amputation. In this case however, the extensive adhesions of the integuments over the tuberosity of the *os calcis* and the numerous sinuses around the malleoli, through that portion of the skin that was to form the posterior flap, served to render the proceeding somewhat hazardous. Numerous fears were entertained both by myself and the professional gentlemen who were in counsel with me, that the malleoli and possibly the articulating surface of the tibia were diseased. Notwithstanding these objections I was so well satisfied of the advantages this operation would afford, by giving a broader, firmer, and better base for supporting the weight of the body, and the greater facilities that the thick cushion formed by the heel would give for the adjustment of an artificial *foot*, that I determined to amputate there. Having placed my patient in a proper position and put her under the influence of chloroform, I seated myself directly in front of her, and holding my scalpel in the left hand I made an incision from a little behind the internal malleolus transversely across the sole of the foot—to a point near the middle of the calcaneum. Then with my right hand I made a similar incision from the corresponding point of the external malleolus to meet the first. Then, after making a curved incision from the commencement of the *first* to that of the *second*, across the superior surface of the foot, I divided the extensor tendons and the articular ligaments, and turning the foot down, I carried the knife through the tibio tarsal articulation and separated the tendo achillis from its osseous attachment with some difficulty, owing to the strong adhesion of the integuments and their thin and unhealthy texture. Great care was taken to avoid cutting the posterior tibial artery before its division into the two plantars, on a line with the articular surface of the tibia. The foot being removed, the ends of the malleoli were taken off with the cutting forceps and the flaps brought together. The anterior and a branch of the posterior tibial arteries were the only ones that I was obliged to secure. As we supposed, the malleoli were diseased, but the articulating cartilage of the tibia was healthy, and consequently was not removed. Owing to the unhealthy condition of the integument forming the posterior flap, and the difficulty of adjusting the cup-shaped covering of the heel, to the square surfaces of the tibia and fibula, I was apprehensive that suppuration and possibly sloughing, would occur—consequently with the knife and cutting forceps, I rounded the stump so as accurately to adapt it to the concavity of the flap. I also removed the synovial membrane covering the articular surface of the tibia—lest its secretion should retard the adhesion of the flap. The wound healed in fifteen days with but very little suppuration, and in thirty days the patient was able to bear her weight upon the *stump*. In about three months from the operation, she was taken to Messrs. Palmer & Co, and an artificial foot was adjusted, giving the whole weight of the body upon the end of the stump, and now she walks so well that a *careless* observer would never suspect that she was even lame.



The accompanying cuts illustrate the appearance of the foot at the time of the operation, with its fistulous openings, the manner of operating, and the character of the stump after recovery.

Blancard's Pills.—The iodide of iron is a remedy of almost universal use by the medical profession, because it combines the properties of iodine and iron—two most important articles in our therapeutical list. And yet it is an article of very variable quality. The form of preparation best adapted to combine and preserve its ingredients is, we believe, that of Blancard. The article is thus not only well preserved, but obtained in a convenient form of administration.

Private Medical Instruction.—It is to be regretted that so little effort is made, especially by the younger members of the profession, to systematize private medical instruction in this city, and render its wealth of material available to students. It has recently been attempted by private teachers, and the effort has been crowned with complete success. We refer to the school of Drs. Donaghe and Thomas, which not only *offers* the necessary advantages to students, but what is of vastly greater importance, *realizes* them to the fullest extent. In this fact lies the secret of their success: every branch of study is amply *illustrated* or practically *demonstrated.* We take pleasure in referring medical students who are seeking private instruction in this city to this school.

Tully's Materia Medica.—A notice of this great work has been unavoidably omitted. Copies may be obtained of Dr. E. D. Hudson, 378 Broadway.

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